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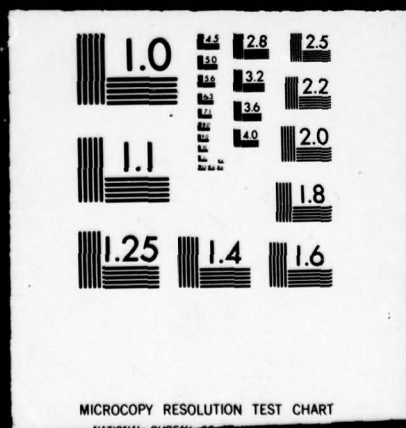
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(MAKRO)

VOLUME I

MARCH 1979



CAA-SR-79-6

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Commander
US Army Concepts Analysis Agency
ATTN: Director of Methodology, Resources
and Computation
8120 Woodmont Avenue
Bethesda, MD 20014

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prescriptive measures were nominated to improve certain PPBS processes. The paramount MAKRO study insight is, that the Army PPBS is responsive to higher authorities at the expense of time for rigorous analysis. The study presents two alternatives which singly or together could enhance the quality of analysis supporting Army PPBS: (1) seek relief from the highly interactive/reactive dialogue with higher echelons that is conducted particularly during programing and budgeting; (2) expand the scope of planning to provide more detail of resource sensitive issues for use in programing.

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STUDY REPORT
CAA-SR-79-6

MANAGEMENT ANALYSIS OF KEY
RESOURCE OPERATIONS
(MAKRO)

VOLUME I

March 1979

PREPARED BY
METHODOLOGY, RESOURCES AND COMPUTATION DIRECTORATE

US ARMY CONCEPTS ANALYSIS AGENCY
8120 WOODMONT AVENUE
BETHESDA, MARYLAND 20014



DEPARTMENT OF THE ARMY
US ARMY CONCEPTS ANALYSIS AGENCY
 8120 WOODMONT AVENUE
 BETHESDA, MARYLAND 20014

IN REPLY REFER TO

MOCA-MRR

APR 2 1979

SUBJECT: Management Analysis of Key Resource Operations (MAKRO) Study

Chief of Staff, US Army, ATTN: DACS-DPZ-A, Washington, DC 20310
 Deputy Chief of Staff for Operations & Plans, Department of the Army,
 ATTN: DAMO-SSZ, Washington, DC 20310
 Comptroller of the Army, ATTN: DACA-BUZ-A, Washington, DC 20310

1. Reference is made to your memoranda dated 7 June 1978, subject: Tasking Directive - Management Analysis of Key Resource Operations (MAKRO), and 26 October 1978 subject: Management Analysis of Key Resource Operations (MAKRO) Study - Modification of Tasking Directive, respectively. These memoranda directed the US Army Concepts Analysis Agency (CAA) to study and report on the Army Planning, Programing, Budgeting System (PPBS).
2. Attached is the final report which documents the analysis of Army planning, programing, and budget formulation phases of PPBS and suggests ways to improve the system. In conducting the study, the principal PPBS activities at HQDA were identified, then studied using a rigorous analytic approach, and documented. This methodology resulted in a series of prescriptive measures which, in our view, could improve the Army PPBS processes immediately; these were briefed to you during our in-process reviews and are fully documented in this report.
3. The over-riding MAKRO study insight is that the Army PPBS is responsive to higher echelons at the expense of time for rigorous analysis. This insight and suggested alternatives are discussed below and are quite analogous to (though independent of) the main proposals of the Defense Resource Management Study (DRMS), February 1979, directed by Dr. D. B. Rice of the RAND Corporation at the request of the President.
 - a. The Army responses to DOD, from the initial Army programing input to the submission of the President's budget, creates a very work intense environment. In that 14-month period, the Army submits 8 sets of input and receives 7 sets of guidance; there is little time for analysis to justify, ultimately, the President's budget to Congress. In the interest of a more analytically derived product, some of those milestones should be removed.

MOCA-MRR

SUBJECT: Management Analysis of Key Resource Operations (MAKRO) Study

b. Army planning responds to the Joint system and creates planning output that is too general for use in programing. The scope of Army planning should be expanded to generate adequate details and facilitate the preparation and analysis of the Army program.

4. Network theory represents a useful tool in the analysis of the Army PPBS. Each major process of the system is now described by a pictorial representation. I recommend that these representations be given wide dissemination to assist agencies in better understanding and managing the PPBS.

1 Incl
as

Ennis C. Whitehead, Jr.
ENNIS C. WHITEHEAD, JR.
Major General, USA
Commanding

SUMMARY

1. BACKGROUND ON ARMY RESOURCE OPERATIONS. Throughout the Army, thousands of resource management activities are accomplished each year. These include such actions as identifying needs, estimating requirements, formulating justifications, and allocating resources. These activities are part of the Army's Planning, Programming, and Budgeting System (PPBS), the subject of this report. An analysis of PPBS was accomplished through a rigorous, systematic examination of activities that occurred during calendar year (CY) 78. Special consideration was given to the theory and objectives of a PPBS in order to compare the observed Army PPBS application with the objectives.

a. The Army PPBS complements and responds to the Department of Defense (DOD) PPBS. The Army system, as described in AR 1-1, provides for progression from planning to programming to budgeting phases as summarized below. Planning addresses the development of military strategy, force objectives, and force capabilities for the attainment of national security objectives. Programming is principally the translation of Office of the Secretary of Defense (OSD) guidance (not planning output) into comprehensive resource allocation proposals for a five-year period of time. Budgeting is divided into a formulation subphase, in which the program is refined into detailed fund estimates and manpower statements; and an execution subphase, in which funds and manpower are allocated, funds are obligated and expended, and the actual use of the funds and manpower is reported.

b. Each PPBS phase occurs every year and each is ongoing throughout the year; that is, a single year is not divided into planning to programming to budgeting phases. Each phase requires the interactive accomplishment of numerous activities by the Army Staff (ARSTAF) and major commands (MACOM) to generate the various products. The number of activities is amplified by the quantity and frequency of PPBS guidance and response milestones. The interrelationships between activities in different phases result in a complex system. This environment is further complicated by frequent and dynamic changes to the Army and DOD PPBS.

c. The quantity of activities, the frequency of milestones, and the lack of control over the changes make for a chaotic system and reduce the amount of time available for essential analysis.

2. PURPOSE AND SCOPE OF THE STUDY. The Army planner, programmer, and budgeteer--Director, Strategy, Plans, and Policy; Director, Program Analysis and Evaluation; Director of the Army Budget,

respectively--tasked the US Army Concepts Analysis Agency (CAA) to conduct the Management Analysis of Key Resource Operations (MAKRO) Study. The purpose of the study was to:

- Analyze the Army resource planning, programing, and budgeting system.
- Prescribe systematic measures for managing the preparation of resource justification documents.

a. The MAKRO Study consists principally of an analysis of HQDA level activities in the planning, programing, and budget formulation phases. The MACOM and installation level activities are those associated with the transfer and receipt of guidance and the subsequent forwarding of responses.

b. The analysis was conducted from February 1978 through March 1979. The analysis addresses the significant changes to the Army PPBS as a result of DOD PPBS changes, such as the Consolidated Guidance (CG) and the Joint Strategic Planning System (JSPS) revisions that occurred in CY 78. Additionally, changes projected for the Army PPBS in CY 79 are discussed in the report.

3. THE STUDY APPROACH. The term "system" applied to PPBS indicates that it is comprised of interrelated activities. The MAKRO study approach required extensive data collection on the activities followed by the formulation of descriptive models of the interrelated activities and the subsequent assessment of problems and candidate improvements.

a. The host of activities, the diversity of participants, and the continually changing nature of the system had left the Army with very little documentation of the PPBS; the documentation available was generally outdated. The quantity of activities and the complexity of the interactions required spending a significant portion of the study effort analyzing thousands of individual activities. Interviews were conducted with hundreds of participants to identify the work performed, obtain a measure of that work, and ascertain the predecessor and successor activities. The quantitative measure of the work performed was the actual time in days available to accomplish the work, since other measures, such as number of personnel or most likely time estimates, were not obtainable in the analysis.

b. The magnitude and complexity of the activity interrelationships became fully evident during the formulation of analytical, descriptive models. A single cycle of PPBS includes all phases from planning to programing to budget formulation to budget

execution. All of the phases in a cycle do not occur in a single fiscal year (FY); rather, it takes approximately five years to complete a single cycle. Consequently, the planning, programing, budget formulation, and budget execution phases that occur in any FY are associated with five different cycles. This level of complexity is illustrated in Figure 1. The figure shows a six-year block of time and the cycles which initiate in that period. Assuming that the column labeled "Present FY" corresponds to FY 79, then reading from the top of the column, the following PPBS cycles are being influenced: (1) the FY 79 budget is being executed; (2) the budget formulated for FY 80 (to FY 84) is in its final justification before Congress; (3) the FY 81-85 program will be completed and the initial formulation of the FY 81 (to FY 85) budget will follow; (4) the FY 81-88 planning is completed, and the FY 82-86 programing will begin; and (5) the FY 82-89 planning will begin. A single decision made in any phase may ripple through all the other ongoing phases.

c. The MAKRO study effort included formulating and analyzing the descriptive network diagrams that are models of the activities and interrelationships of PPBS. The disciplined, logical analysis that was required in the preparation of network diagrams was beneficial in insuring that the analysts understood the processes.

(1) The preparatory analysis illuminated problems and the network models served as the basis for assessing the impact of prescriptive measures.

(2) The models facilitated the definition and subsequent analysis of Army inter-PPBS phase relations, e.g., planning to programing to budget formulation. Essential to the inter-PPBS phase analysis was an examination of the general theory and objectives of PPBS.

4. THE THEORY AND OBJECTIVES OF A PPBS. A PPBS has been in effect in the DOD since 1962. The system was established on theory that a multi-Service decisionmaking system improves the management of resources. The original objectives of the system were to relate independent planning and budgeting activities into the multi-Service decisionmaking system and to emphasize analysis in support of decisionmaking. The objectives were deemed essential for reasons that included: the total amount requested in the three Service budgets exceeded the amount available for defense; the growth in equipment acquisition cost required the stretching out of the procurement over time; the future implications of budget decisions limited the options available for planning consideration.

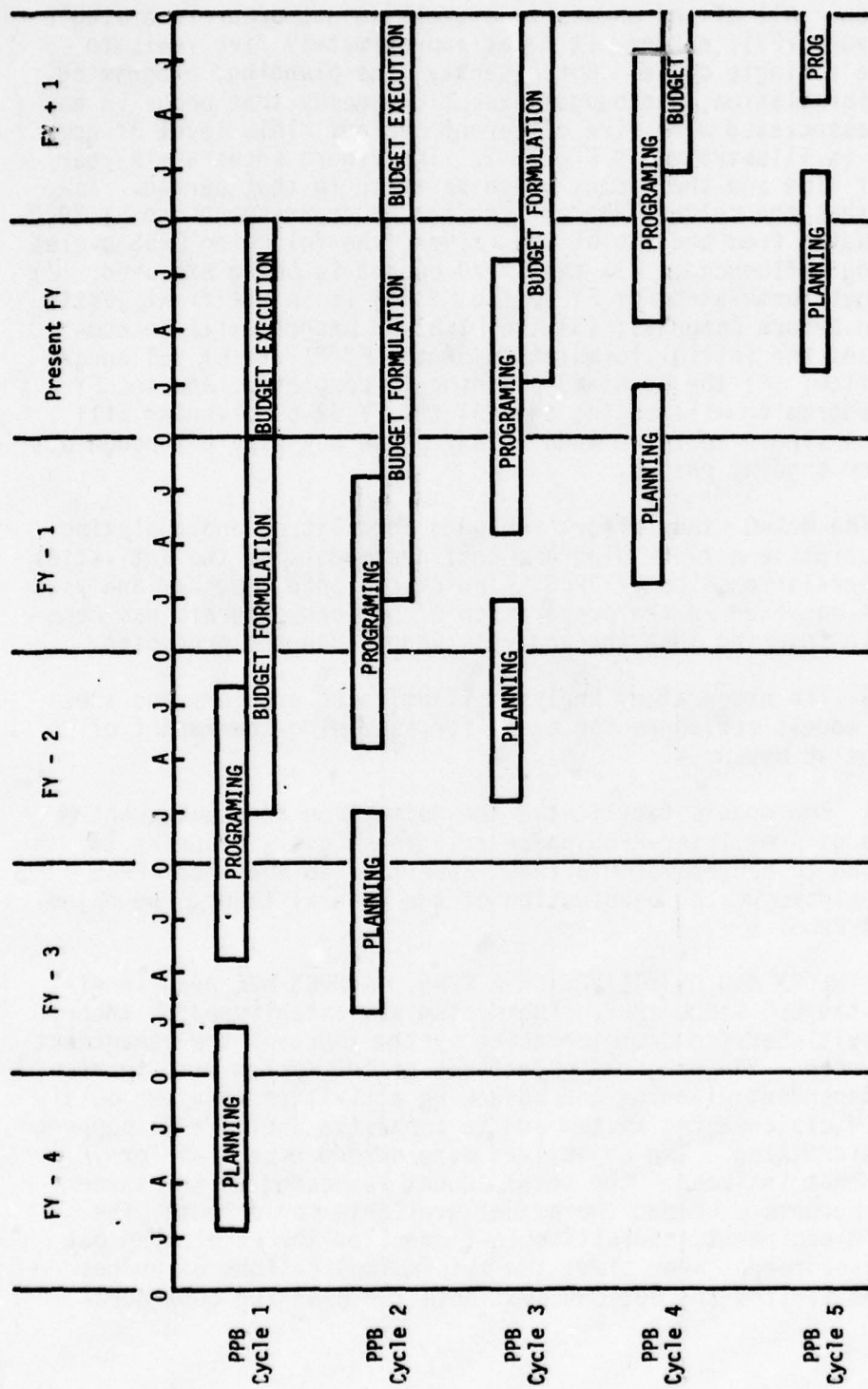


Figure 1. The PPB Cycles

The federal and DOD systems specified that planning was to recommend the organization's future and analysis was to bridge the gap from the present towards the future. President Johnson reinforced the objective when he announced the system to the Cabinet; he stated that the system was to "improve our ability to control our programs and our budgets, rather than having them control us...."

5. THE ARMY PPBS APPLICATION. In the MAKRO examination of the CY 78 PPBS activities, varied and complex problems associated with the merger of planning and budgeting were recognized clearly. The Army and the governing DOD PPBS require numerous formal information exchanges between the Army and higher echelons--JCS, OSD, OMB, and Congress. All the exchanges require quick responses to questions posed by the higher echelon. The Army requires information exchanges with operational headquarters to support the Army exchanges with DOD PPBS. The preparation of responses from subordinate commands to HQDA is based on advanced, subject-to-change guidance.

a. An overview of the Army and higher echelon interface as observed during the MAKRO analyses is illustrated in Figure 2 (for a discussion, see Chapter 3, para 3-3a). The figure is read from planning on the left through budgeting on the right; the higher echelon events are on the top and HQDA events on the bottom. The figure illustrates the principal guidance to the Army and Army responses in a single PPBS cycle.

b. The overall interface between HQDA and operational headquarters is illustrated in Figure 3 (for a discussion, see Chapter 3, para 3-3b). This figure portrays the guidance to the Army operational headquarters and the responses to HQDA in a single PPBS cycle.

c. A basic objective of a PPBS is analysis to support decision-making. But interactive and highly reactive implementation of the PPBS theory has reduced the time available for that analysis (see Figure 1). The active environment in which the Army is forced to operate is counter to the analytic objective of PPBS.

6. THE NETWORK DIAGRAMS OF ARMY PPBS. The analysis provided a clear understanding of three phases of PPBS and resulted in the production of compatible descriptive network diagrams of the three phases. The network diagrams offer the various participants--whether ARSTAF director, action officer, or analyst at subordinate command--clear pictures of the three phases. This provides a unique opportunity to identify essential decision points.

a. The MAKRO analysis produced 21 descriptive network models; 13 specifically project or are applicable to CY 79 milestones and can be used for managing--that is, for planning, scheduling, directing, coordinating and controlling--the Army PPBS in CY 79.

b. The diagrams provide the Army with a unique data set for assimilating changes to PPBS.

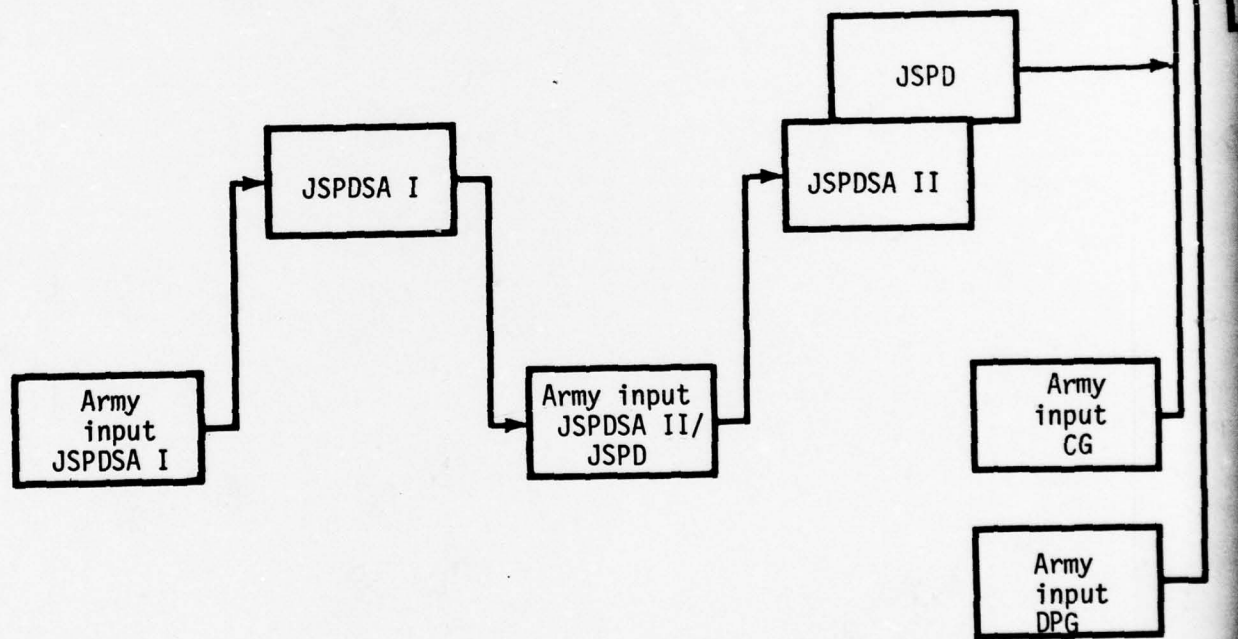
c. The rigorous, systematic analysis provided numerous insights into the PPBS environment and formed the basis for the subsequent development of management prescriptions, the inter-PPBS phase analysis, and the major observations.

7. MANAGEMENT PRESCRIPTIONS FROM THE INTRA-PPBS PHASE ANALYSIS. During the research into the activities and the verification of the descriptive network diagrams, the MAKRO Study Group requested that the individuals interviewed discuss difficulties or problems they perceived with PPBS. In addition, problems were discovered by the study group when the models were being constructed from the information provided during the interviews. The situations were examined to define the underlying problems, causes, and effects; subsequently, management prescriptions were formulated to correct or improve the situations.

a. It was observed that Army changes made in the interest of improving one process could have adverse or counterproductive impact on one or more other processes; this is because of the complex interactions within Army PPBS. The MAKRO network methodology provided an ability to analyze processes and PPBS phases interactively; therefore, prescriptive measures could be formulated to improve certain processes without adversely impacting others. During the conduct of the study, prescriptions were derived and briefed to the study sponsors at in-process reviews (IPR).

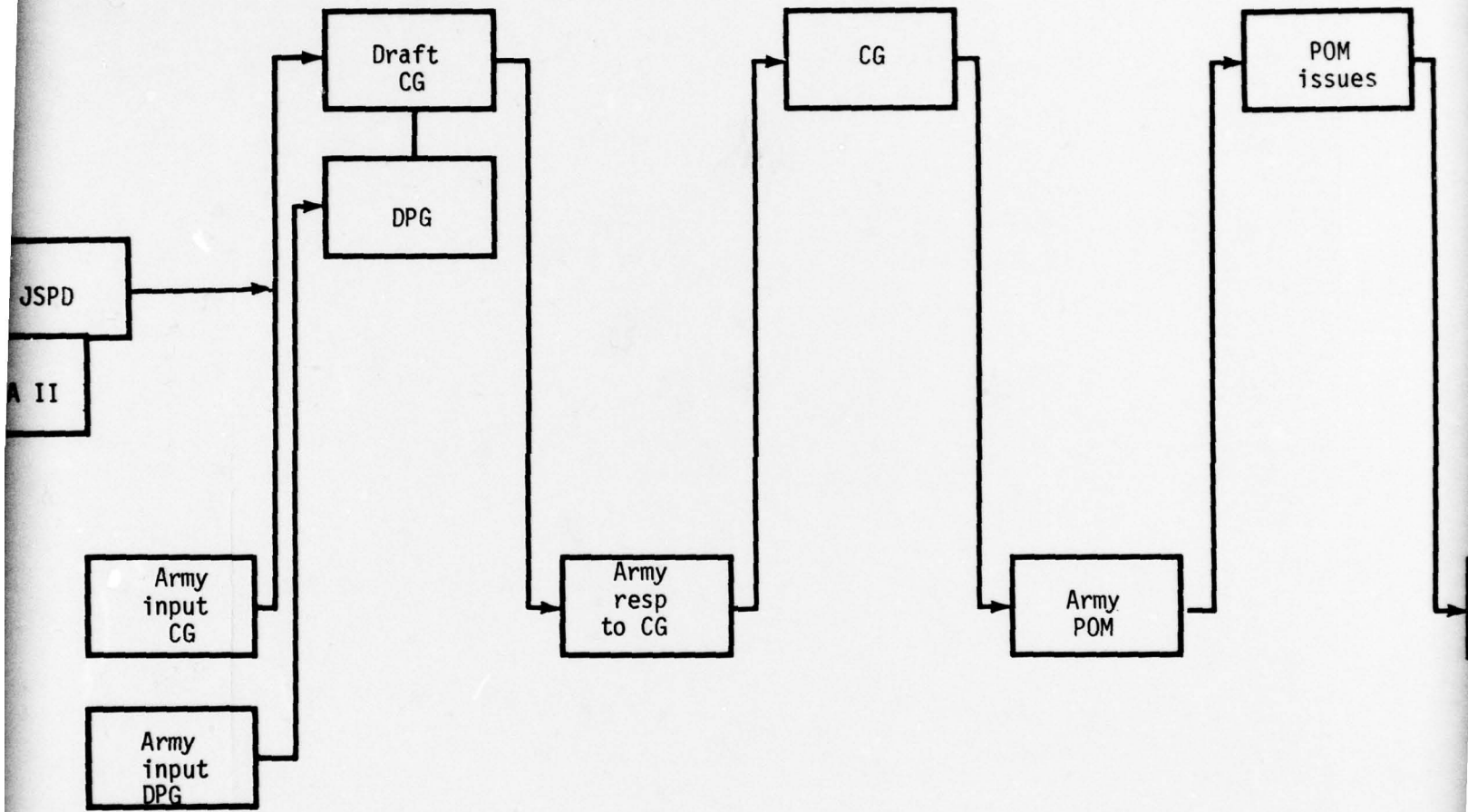
b. A complete set of management prescriptions is presented in Chapter 5. Certain prescriptions in that chapter focus on specific problems and others focus on pervasive PPBS problems.

(1) Specific management prescriptions address, for instance, the sequence of processes by which the procurement program is developed. The sequence includes the Logistic Structure and Composition System (LOGSACS) and Army Materiel Plan (AMP) computations. The final activities in each of these processes are a series of iterative reviews to improve the quality of the final products. The release of the LOGSACS and AMP after the first of the iterative reviews in each process reduces the development of the procurement program by six weeks. This time can be used to analyze the impact of the procurement program on other Army programs.



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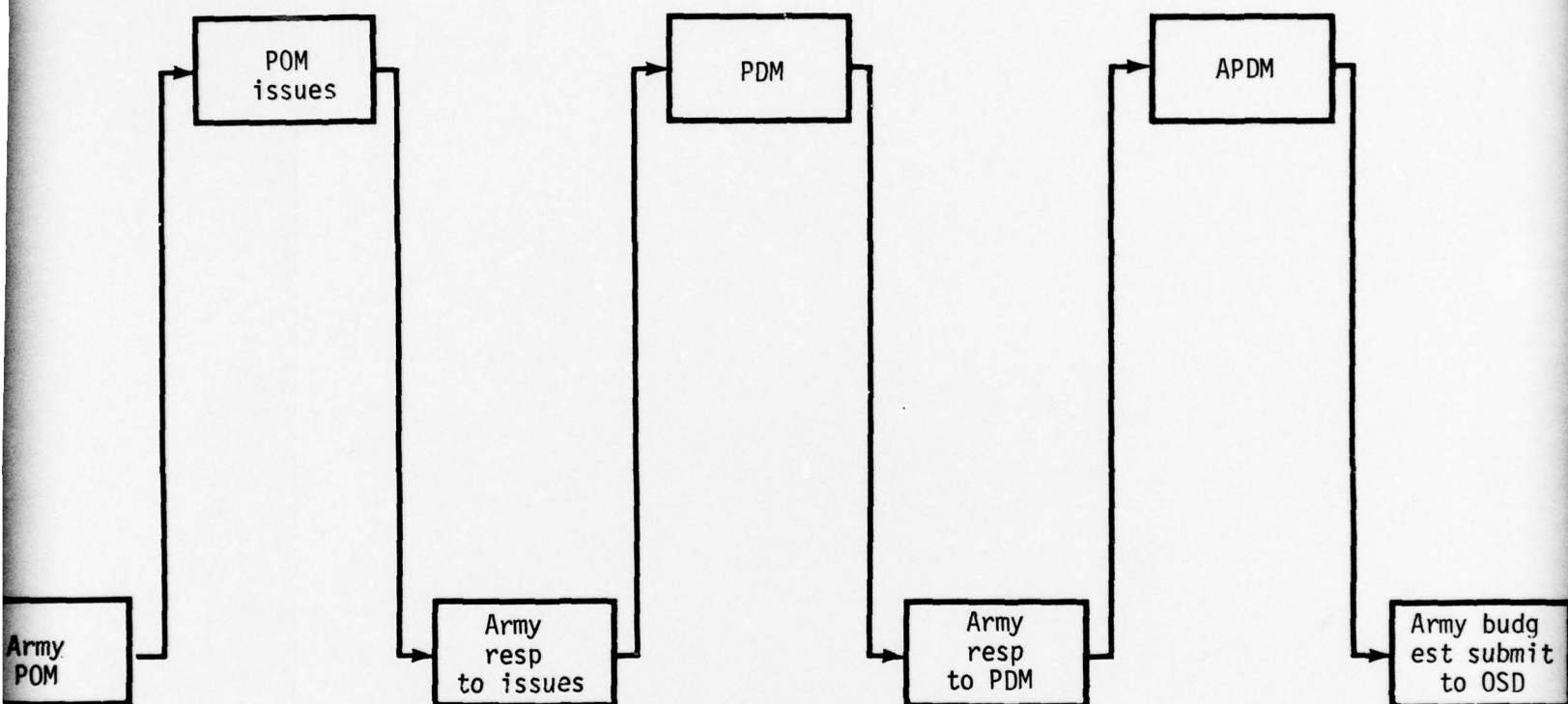
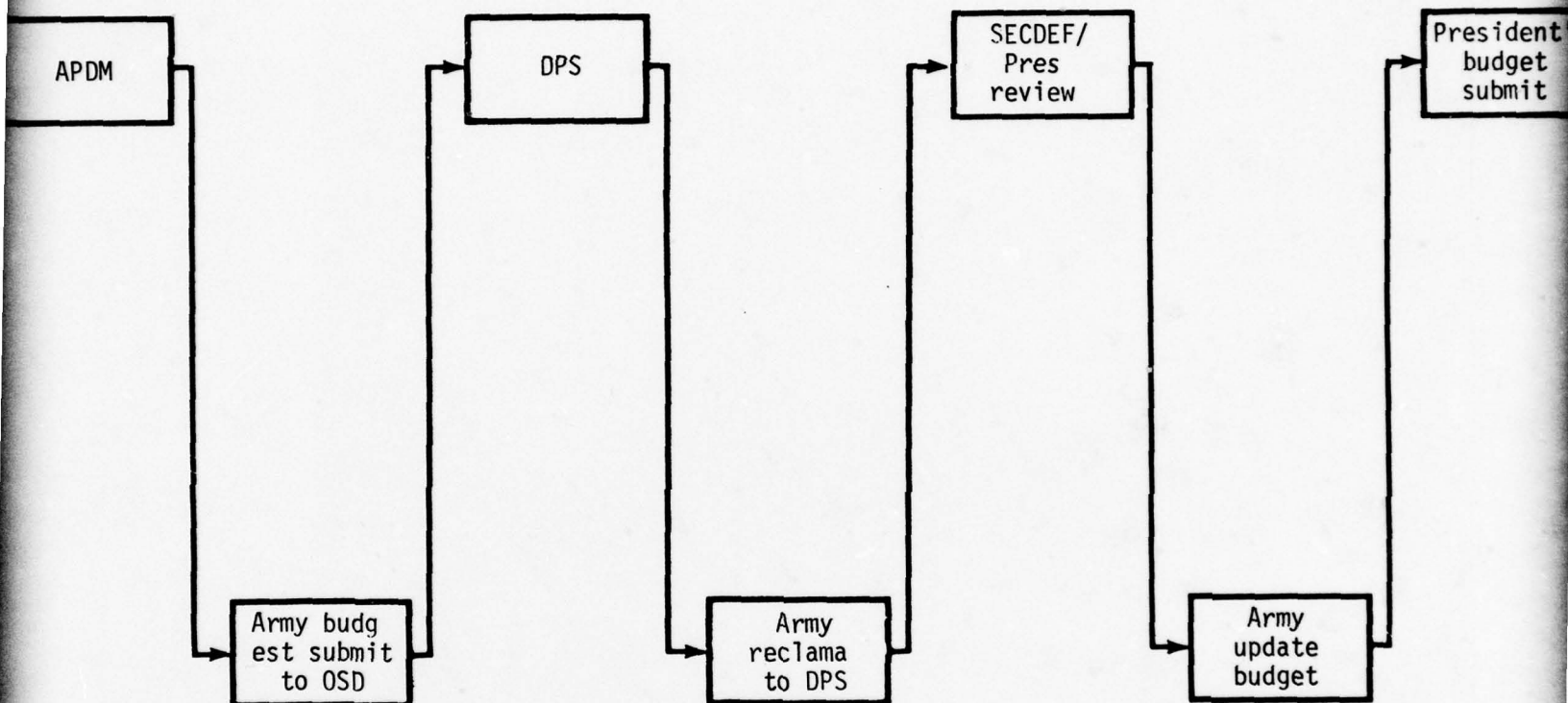


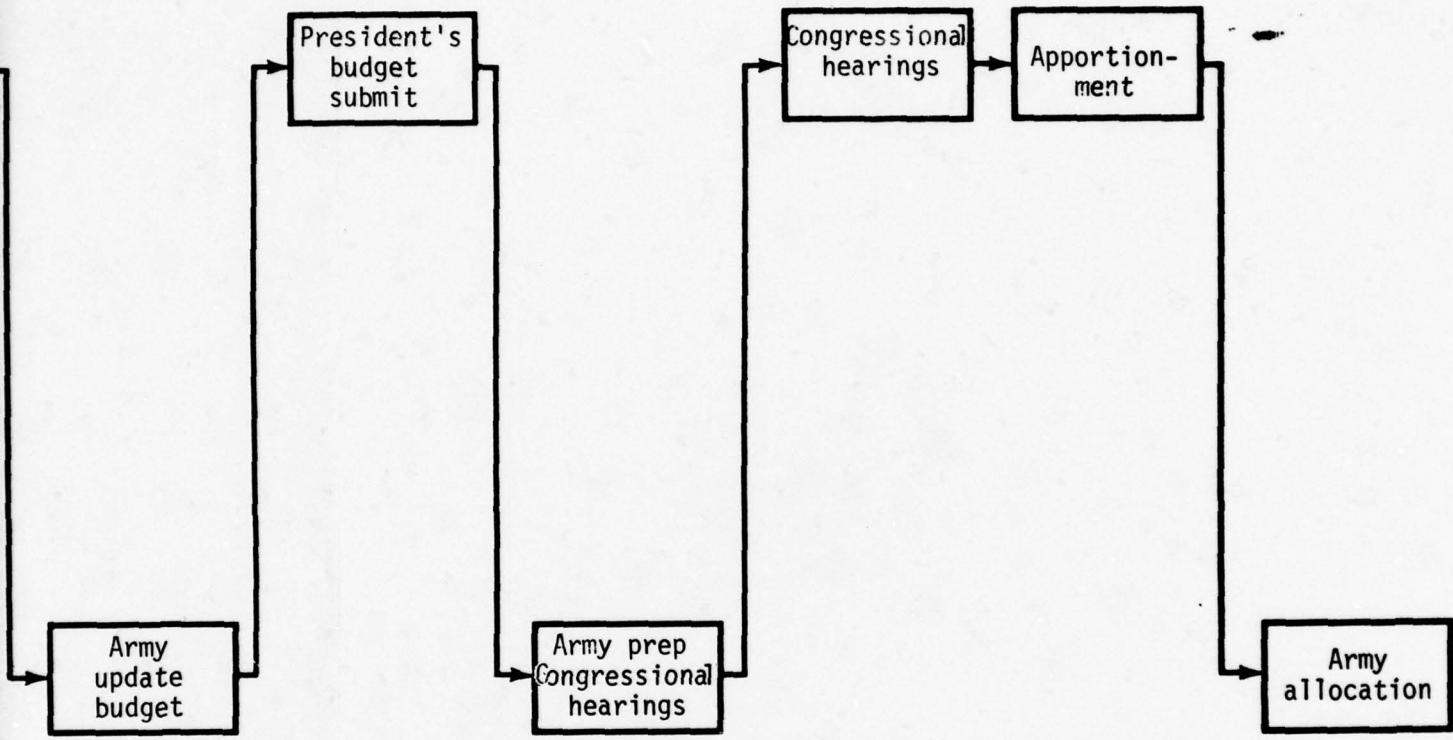
Figure 2. Army to Higher Authority Interchange

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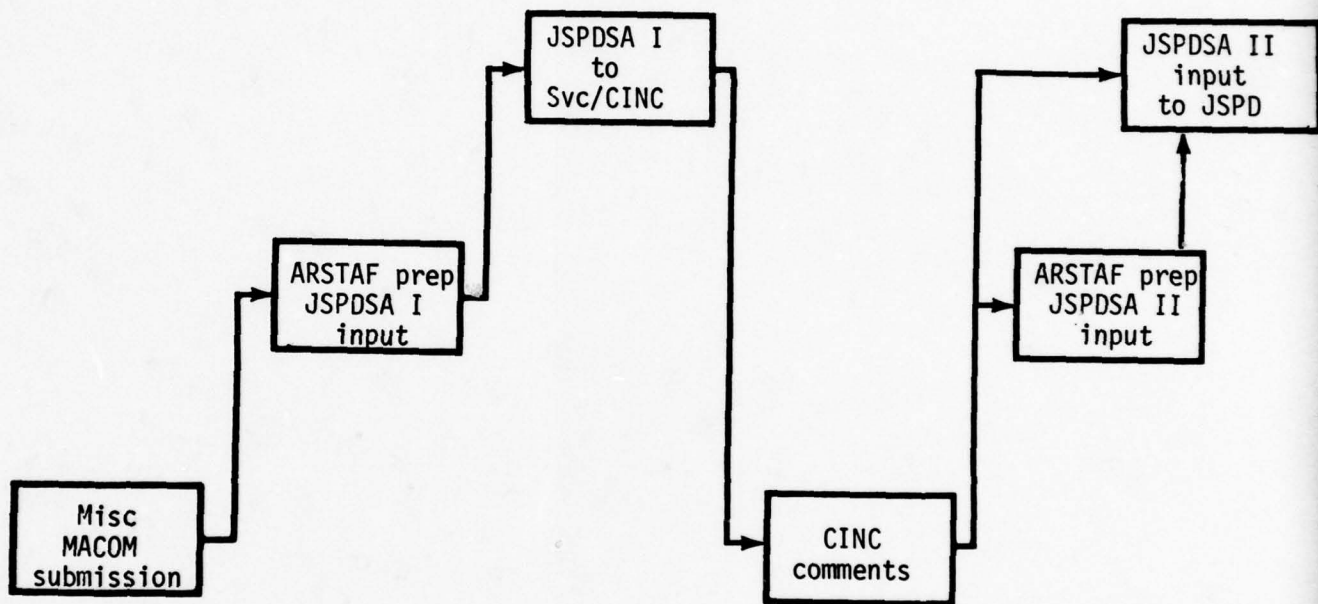


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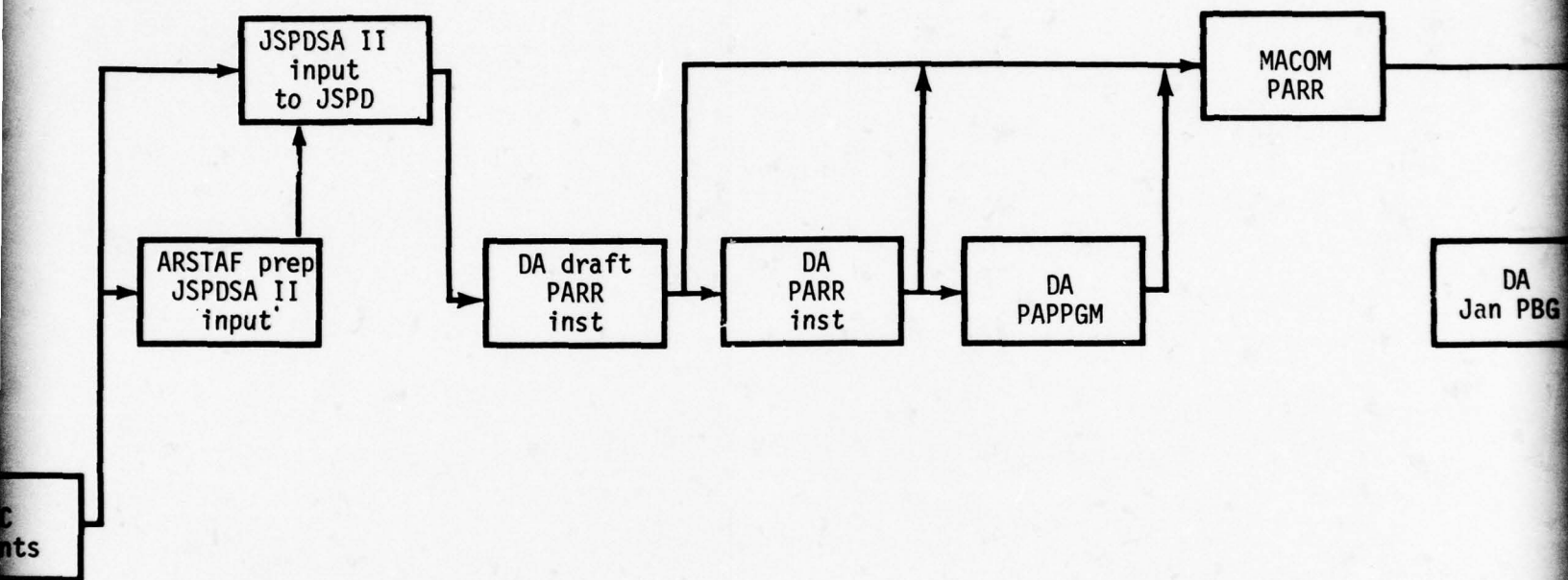
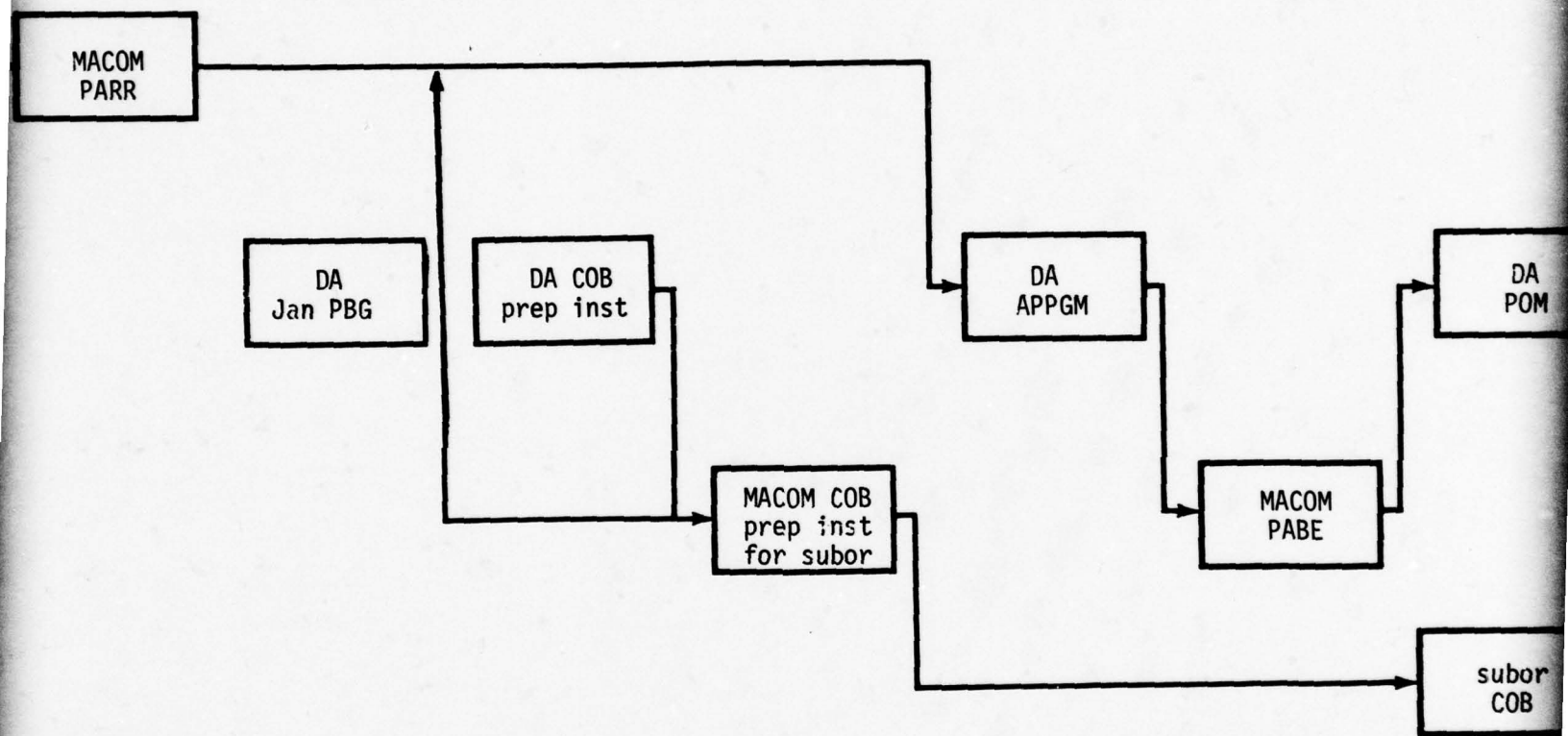
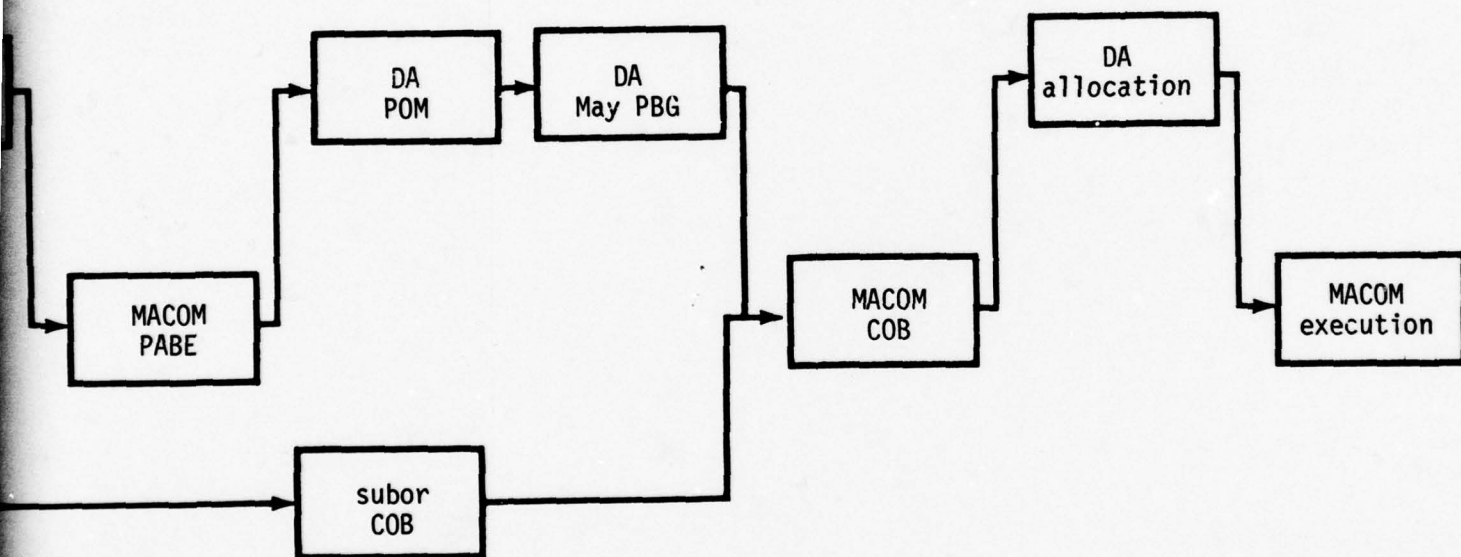


Figure 3. HQDA to Operational

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DA to Operational Headquarters Interchange



CAA-SR-79-6

(2) Two systemic prescriptions for more pervasive problems address Army PPBS management. A combination of these two prescriptions should provide the Army with an improved ability to manage the system; that is, an improved ability to assimilate systemic changes more effectively; and to justify improvements to the Army and OSD systems based on thorough and detailed knowledge of benefits to be gained. Summarizations of the prescriptions are at Tables 1 and 2. Each table indicates: a problem, its cause and effect, a prescription and its probable impact.

(a) Table 1 suggests the establishment of a detailed source of information on PPBS to facilitate the management of the system. The MAKRO Study illustrates the benefits to be gained from the use of such information.

(b) Table 2 suggests the establishment of a PPBS management office to schedule, coordinate, and control administratively the system.

8. ALTERNATIVES FROM THE INTER-PPBS PHASE ANALYSIS. In addition to the various analytic efforts discussed above, the MAKRO Study analyzed the inter-PPBS phase relationships to identify alternatives that were applicable between the phases for improving the sequence of activities and the preparation of documents. The activities that linked the phases together were identified during the refinement of the individual network diagrams.

a. The inter-PPBS phase analysis proceeded from the network diagrams and associated schedules. The actual quantity of the activities--approximately 1,500--was too great to consolidate into a single understandable descriptive network diagram.

(1) The lowest level of resolution appropriate for describing overall PPBS activities is illustrated in Figure 4. All of the Army activities in the descriptive network diagrams can be aggregated into major tasks that respond to OSD or JCS guidance. The high degree of interaction necessitates a very intense and highly reactive Army system to generate responses. The resultant Army activities for generating the responses require nearly continuous work at a surge or crisis level of effort. This environment is not conducive to deliberate analysis. The Army provides eight submissions (assuming, unrealistically, a single DPS submission) to higher echelons and receives seven sets of feedback guidance during the 14 months from the preparation of Army input for the draft CG to the President's budget submission to Congress. The Army has to react in less than two months with a significant product for each set of guidance.

Table 1. PPBS Prescription Regarding Information

Problem: The lack of a central information source that documents PPBS terms and processes creates confusion			Impact of prescription
Cause	Effect	Prescription	
-- System is evolving and dynamic	-- No common PPBS language	-- Assign responsibility for maintaining PPBS documentation <ul style="list-style-type: none"> • Detailed • Current 	-- Better understanding
-- No source for detailed and current documentation	-- No consideration of the system impact of schedule delays		-- Effective management of change enhanced
-- PPBS activities are interrelated			-- MAKRO network diagrams provide descriptive base

Notes: (1) Status - Proposed at IPR in Feb 79.

(2) For narrative description see paragraph 5-5a(1).

Table 2. PPBS Prescription Regarding Management

Problem: There is no central management office for the PPBS			Impact of prescription
Cause	Effect	Prescription	
-- Staff sections dependent upon one another	-- Delay/change cause crisis management	-- Assign centralized responsibility for PPBS <ul style="list-style-type: none"> • Scheduling • Coordinating • Administratively controlling 	-- Instill a sense of order to PPBS
-- Responsibility for planning, programming, budgeting divided among three staff sections	-- Scheduling is very reactive		-- Promote overall efficiency
			-- Constant staff attention required

Notes: (1) Status - Proposed at IPR in Feb 79.

(2) For narrative description see paragraph 5-5b(1).

(2) As an alternative, the Army should seek a systemic change to the DOD PPBS milestones. The current schedule is too intense. Quality analysis requires time; Army and DOD decisions should result from quality analysis rather than numerous, iterative reactions to changing guidance.

b. Of particular concern was the linkage between planning and programing. Recall from paragraph 4, above, that one of the original objectives of a PPBS was to link planning and budgeting. The MAKRO Study identified linkages (see Chapter 4), but the linkages were very weak.

(1) Army planning, in coordination with the other Services, prepares designs to accomplish prescribed objectives; the designs include a planning force that has the capability to accomplish the national security objectives. To realize the results of Army planning, the nation would be required to commit a high level of resources over the next 10 years. The national commitment of resources for defense is not commensurate with that level--it is much lower. Army planning occurs at such an aggregated level that information important to programing, such as recruiting and training of manpower; materiel modernization; upgrading, opening, and closing of facilities is not addressed.

(2) Since planning does not provide sufficient detail, programing must fill in the gap. The programing actions apply the manpower and fiscal ceilings announced in the CG and which are much lower than assumed in planning. Since the Army program proposes actions that are feasible within the resource projections, it becomes, *de facto*, the Army plan. This dichotomy requires that planning propose detailed improvements the Army ought to make toward attaining the national security objectives while remaining near enough to the projected resource levels to be feasible.

(3) An appropriate alternative would involve reorientation of both planning and programing; planning functions could be broadened to fill in details currently lacking. The details could be developed from the force and non-force related growth assumed in Army planning and related to the manpower and fiscal ceilings prescribed by OSD. For each year of the 10-year planning horizon, the details should address issues such as manpower, training and modernization. That information would relieve programing from assuming too much of the planning burden and provide meaningful Army plans to support the allocation of resources.

9. OBSERVATIONS. The major observations resulting from this study of the Army PPBS follow.

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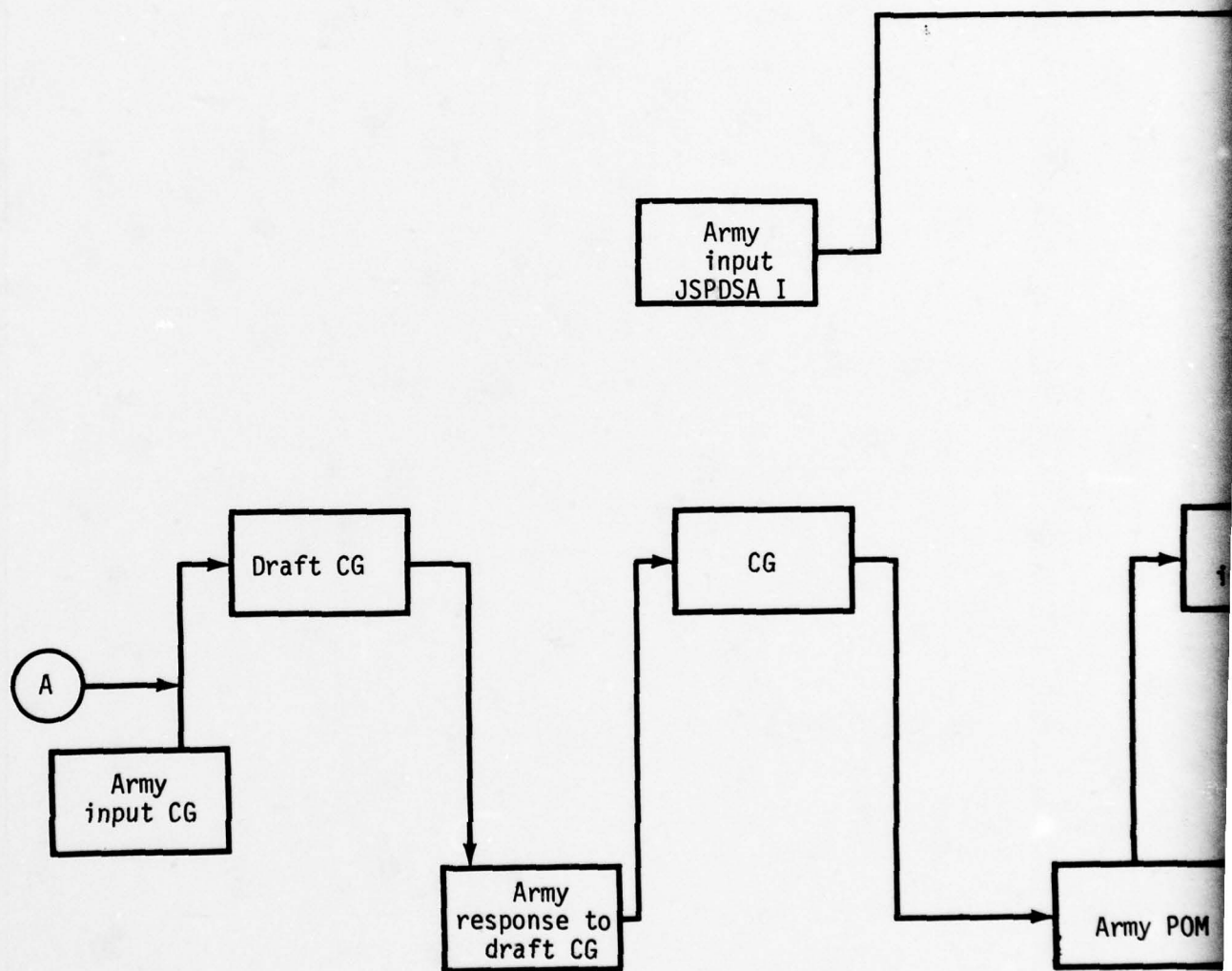


Figure 4. Army to

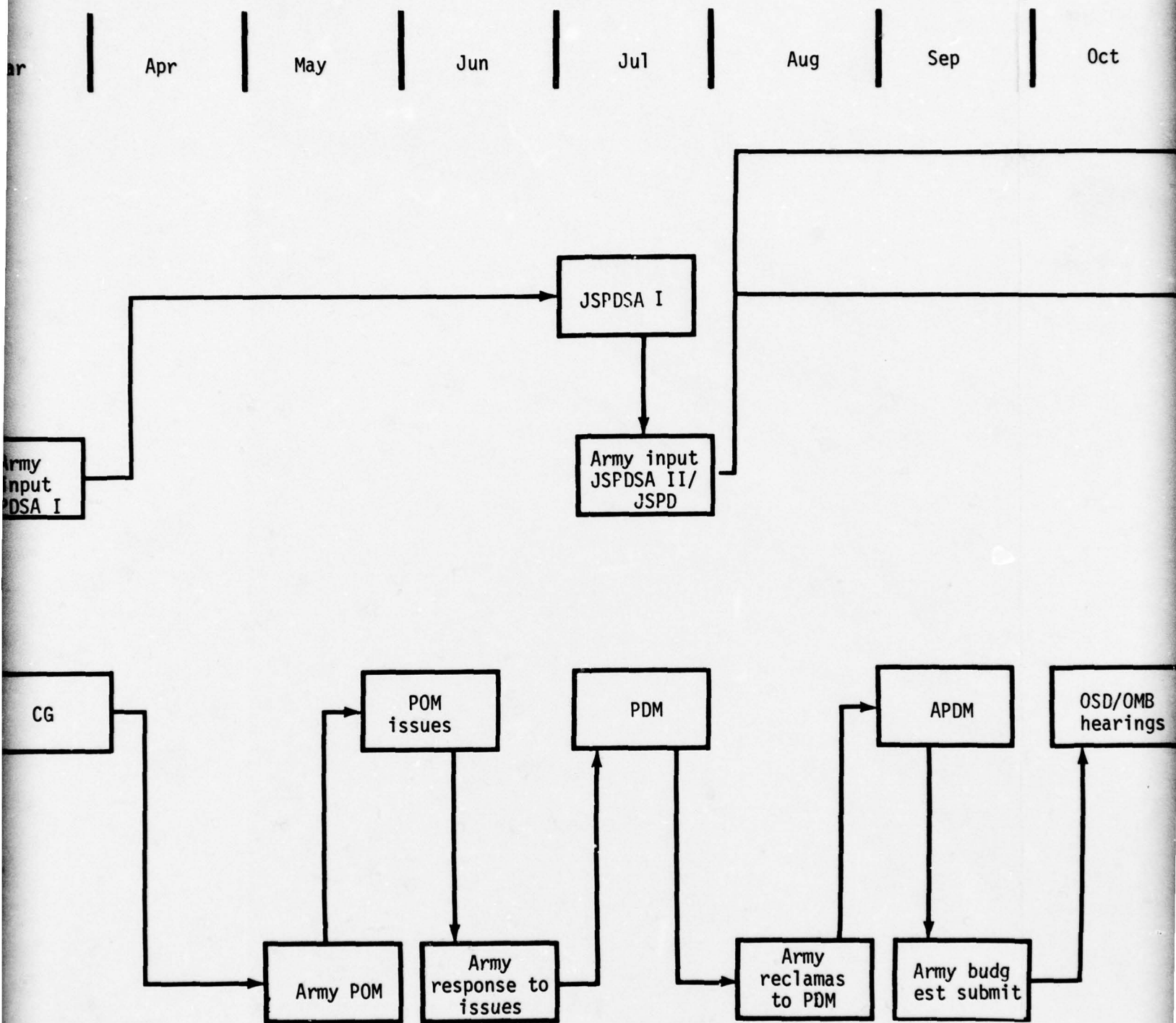


Figure 4. Army to Higher Authority Interchange, CY 78 Expert

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Aug

Sep

Oct

Nov

Dec

Jan

JSPD

A

JSPDSA II

APDM

OSD/OMB
hearings

DPS cycle

SECDEF/
Pres
review

Pres
budget
submission

Army
reclamas
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est submit

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update
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Interchange, CY 78 Experience

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a. The most fundamental observation is that the 17-year old PPBS is a very loosely defined system hampered by outdated regulations and inconsistent definitions.

(1) There is no organization dedicated solely to managing this system. The system is suspense driven and continually reacts to changes imposed by higher headquarters. The importance of PPBS to the Army, plus its complex and dynamic nature, indicates the Army would be well served to have a central system manager. The manager would monitor the system and advise on how to assimilate changes and how the system ought to evolve to best serve the Army.

(2) If there ever was a language common throughout the PPBS, it failed to evolve consistently as the PPBS changed. Consequently, there is no common language today. A common language is necessary if the transitions from planning to programing to budgeting are to be smooth and effective.

b. The Army PPBS reacts to JCS and OSD milestones; the frequency of the milestones requires too many interactions during the year. The preparation of timely responses precludes the opportunity for deliberate analysis.

(1) In 14 months, from the submission of Army comments for the draft CG to the final submission for the President's budget, the Army prepares 8 sets of programing or budgeting submissions and receives 7 sets of changing guidance.

(2) Decisionmaking is a result of numerous iterations in reaction to changing guidance and not as a result of the consideration of alternatives supported by rigorous analysis.

c. The link between planning and programing is weak; the underlying reasons are: (1) Army planning generates force requirements that cannot be funded and (2) Army programing generates details for resource allocation based more on OSD guidance than on the results of Army planning.

(1) Army planning responds to the JSPS; it focuses on the military strategy and the design of a force and force-related requirements that exhibit a capability to attain the national security objectives 10 years hence. Army planning does not develop detailed plans that address resource sensitive issues to complement the force and thus attain the capability.

(2) Army programing responds to OSD; it generates balanced resource allocations among all resource consumers for five years. Thus, Army programing controls the future capability that the Army will actually attain.

(3) Army force requirements are developed in each phase of PPBS. Neither the planning force nor the program force is affordable within the level of resources committed to the Army. The scope of the force development process should be expanded to encompass a methodology for generating detailed Army objectives and corresponding alternatives--force and non-force complements--that will guide the programing of constrained resources in a direction consistent with planning.

d. The link between programing and budgeting is improving; separate Army programing and budgeting activities are evolving toward a single, coordinated process. If this trend continues, there should be a high degree of consistency between the program and the budget.

e. The Army PPBS is a system comprised of interrelated management processes that are amenable to analytical investigation.

(1) Detailed representations or models of the management processes were constructed. These models were analyzed singularly, and as interconnected processes, using techniques of network theory.

(2) The use of network theory in the MAKRO Study represents an important advance in the analysis of the Army PPBS. Each major process in the Army PPBS is described by a pictorial representation. The efforts reported here can be useful to the Army in managing the PPBS now and in assimilating changes to the system in the future.

CONTENTS

	Page
Summary.....	v
CHAPTER	
1 INTRODUCTION.....	1-1
Background.....	1-1
Purpose.....	1-3
Objectives.....	1-3
Scope.....	1-5
Assumptions.....	1-5
Contents of the Report.....	1-6
2 METHODOLOGY.....	2-1
Introduction.....	2-1
Background and Problem Orientation.....	2-1
Major Analytic Elements.....	2-4
Summary.....	2-11
3 PLANNING, PROGRAMING, AND BUDGETING: THEORY AND APPLICATION.....	3-1
The Theory of PPBS.....	3-1
The Army PPBS Theory.....	3-3
The Application of PPBS in the Army.....	3-5
Summary.....	3-10
4 PLANNING, PROGRAMING, AND BUDGET FORMULATION: ENVIRONMENT AND ACTIVITIES.....	4-1
Introduction.....	4-1
Army Planning.....	4-2
Army Programing.....	4-10
Budget Formulation.....	4-24
Recapitulation.....	4-34
5 MANAGEMENT PRESCRIPTIONS.....	5-1
Identification of Requirements.....	5-1
Planning Prescriptions.....	5-1
Programing Prescriptions.....	5-7
Budgeting Prescription.....	5-18

CHAPTER

Page

	PPBS Prescriptions.....	5-18
	Summary.....	5-23
6	ALTERNATIVES.....	6-1
	Introduction of Requirement.....	6-1
	The Base Case: CY 78 Experience.....	6-2
	Reflecting Planning in the Program.....	6-7
	Summary.....	6-14
7	OBSERVATIONS.....	7-1
	Introduction.....	7-1
	Essential Elements of Analysis.....	7-1
	Observations.....	7-3

APPENDIX

A	Study Contributors.....	A-1
B	Tasking Directive.....	B-1
C	Bibliography.....	C-1
D	Force Development Process.....	D-1
	Purpose.....	D-1
	Description.....	D-1
	Insights.....	D-15
E*	Networks.....	E-1
	Annex I. Planning.....	E-4
	Annex II. Programing.....	E-15
	Annex III. Budget Formulation.....	E-31
F	Computer Based Tools.....	F-1
	Introduction and Purpose.....	F-1
	General Description.....	F-2
	MGU Input.....	F-2
	MGU Output.....	F-3
	Description of Component Elements of MGU....	F-3

Glossary.....	Glossary-1
---------------	------------

*Published separately as Volumes II and III of this report.

FIGURES

FIGURE		Page
1	The PPB Cycles.....	viii
2	Army to Higher Authority Interchange.....	x1
3	HQDA to Operational Headquarters Interchange..	xiii
4	Army to Higher Authority Interchange, CY 78 Experience.....	xix
2-1	The PPB Cycles.....	2-2
2-2	MAKRO Methodology.....	2-5
3-1	Army to Higher Authority Interchange.....	3-7
3-2	HQDA to Operational Headquarters Interchange..	3-11
3-3	Army to Higher Authority Interchange, CY 78 Experience.....	3-13
4-1	CY 78 Planning Experience.....	4-3
4-2	CY 79 Planning Projection.....	4-5
4-3	Joint Staff Procedures.....	4-6
4-4	Planning Processes Flow, CY 79.....	4-11
4-5	Army Programing Viewed as a Transformation Process.....	4-13
4-6	Chronological Perspective of Programing and Budgeting.....	4-14
4-7	Methodology for ZBP Application.....	4-16
4-8	Planning to Programing Linkage.....	4-17
4-9	Budget Formulation Overview.....	4-26
4-10	CY 78 Budget Development Experience.....	4-30
4-11	Projected CY 79 Budget Development.....	4-32
4-12	Five-day Turnaround for DPS Reclama.....	4-35
4-13	Field Input and Major HQDA Reviews.....	4-40
5-1	CY 78 Planning Experience.....	5-2
5-2	CY 79 Planning Projection.....	5-4
5-3	Current Program Force Development Linkage....	5-5
5-4	Proposed Program Force Development Linkage....	5-9
5-5	Concurrent Phases and Cycles.....	5-20
6-1	Army to Higher Authority Interchange, CY 78 Experience.....	6-5
6-2	Orientation and Time Focus Differences.....	6-10
6-3	The 10-Year Program Force.....	6-10
6-4	Decrementing the Planning Force.....	6-11
6-5	Building the Core Program.....	6-12

FIGURE

		Page
D-1	The Foundation.....	D-2
D-2	Refinement Impact.....	D-3
D-3	What Force Defeats the Threat?.....	D-5
D-4	What Combat Force Meets Guidance?.....	D-7
D-5	Can the Force Defeat the Threat? How Much Support is Needed? Will it Get There in Time?.....	D-8
D-6	Can the Force be Attained?.....	D-9
D-7	What Force Level Can be Developed by POM?.....	D-11
D-8	Can the Force be Supported?.....	D-13
D-9	What Must be Bought to Field a Force?.....	D-14
F-1	MAKRO Graphics Utility Element Composition....	F-4

TABLES

TABLE

		Page
1	PPBS Prescription Regarding Information.....	xvi
2	PPBS Prescription Regarding Management.....	xvii
1-1	The Purpose of MAKRO.....	1-3
2-1	Terms and Definitions.....	2-8
2-2	Network Building Blocks.....	2-9
4-1	Principal Army Budget Estimates.....	4-28
5-1	Planning Prescription #1.....	5-24
5-2	Planning Prescription #2.....	5-25
5-3	Programing Prescription #1.....	5-26
5-4	Programing Prescription #2.....	5-27
5-5	Programing Prescription #3.....	5-28
5-6	Programing Prescription #4.....	5-29
5-7	Programing Prescription #5.....	5-30
5-8	Programing Prescription #6.....	5-31
5-9	Programing Prescription #7.....	5-32
5-10	Programing Prescription #8.....	5-33
5-11	Programing Prescription #9.....	5-34
5-12	Programing Prescription #10.....	5-35
5-13	Budgeting Prescription.....	5-36
5-14	PPBS Prescription #1.....	5-37
5-15	PPBS Prescription #2.....	5-38
5-16	PPBS Prescription #3.....	5-39
5-17	PPBS Prescription #4.....	5-40

CHAPTER 1

INTRODUCTION

1-1. BACKGROUND. The Management Analysis of Key Resource Operations (MAKRO) Study addresses the main Army activities associated with resource management. The resource management activities are accomplished at Headquarters, Department of the Army (HQDA) and worldwide; however, this study addresses primarily the activities of HQDA. The type of activities includes such actions as identifying needs, estimating resource requirements, formulating justifications, and distributing allocated resources. The activities are part of the paramount resource management system of the Army which is called the Army Planning, Programing and Budgeting System (PPBS). An analysis of the Army PPBS is the subject of this report.

a. Planning, Programing and Budgeting System. The Army PPBS is prescribed in Army Regulation (AR) 1-1, 25 May 1976, subject: Administration: Planning, Programing and Budgeting Within the Department of the Army. Certain documents and milestones in the AR are now obsolete as a result of changes; however, the PPBS framework is still applicable.

(1) There is a logical order in Army PPBS which provides for a progression from planning to programing to budgeting. Planning addresses the development of military strategy, force objectives, force capabilities, and resources for the attainment of national security objectives. Programing translates plans into comprehensive allocations of materiel, manpower, and funds for a five-year period of time within Department of Defense (DOD) specified fiscal and manpower constraints. Budgeting is divided into two sub-phases: formulation, which refines the program into detailed fund estimates and manpower statements; execution, which includes the allocation of funds and manpower, the obligation and expenditure of funds, and the reporting on the use of the funds and manpower.

(2) The regulation on PPBS identifies the milestones and documents prescribed by higher headquarters to the HQDA, and directed by HQDA to the Army Staff (ARSTAF) and major commands (MACOM). The dissemination of guidance to and participation by the ARSTAF and MACOM are essential to Army PPBS.

(3) The Army PPBS is complementary to and responds to the DOD PPBS and the Joint Strategic Planning System (JSPS). The DOD PPBS is the management system that emphasizes both analysis for decisionmaking and the integration of those decisions into

resource allocations over time. The JSPS is the Joint Chiefs of Staff (JCS) planning system for recommending strategy and force planning, and for describing areas of risk to the President and the Secretary of Defense (SECDEF). The DOD PPBS is dynamic, as evidenced by the recent changes associated with the Consolidated Guidance (CG) and zero-base budgeting (ZBB). When not reacting to dynamic changes by DOD PPBS, the Army PPBS tends to evolve, i.e., internal management systems and processes continually change in such things as the scope of the MACOM Program Analysis and Resource Review (PARR) in the past five years.

(4) A study was required to investigate the organizational and system interfaces which are emerging from the changing PPBS and to provide management insights that can improve existing resource management techniques. Systematic procedures to capitalize on available Army analytical capabilities and information for analysis were required in that study.

b. The Problem. The Army PPBS is composed of separate planning, programing, and budgeting phases. Each phase occurs every year and requires the accomplishment of activities by the ARSTAF and MACOM. The quantity and frequency of PPBS guidance and response milestones amplify the number of activities into the thousands. The complexity of that environment is further complicated by the changes to the Army and DOD PPBS. The quantity of activities and the frequency of the milestones reduce the amount of time available for essential analysis.

c. The Study Concept. The US Army Concepts Analysis Agency (CAA) was directed to analyze the key activities accomplished in resource management operations and to prescribe systematic measures for managing the preparation of resource justification documents.

(1) This study emanated from the CAA analysis of the Army authorization system and its interrelated authorization change environment, CAA Study Report (SR) 77-7, Management of Change (MOC) Study, June 1977. In the MOC Study, the authorization system and its environment were researched and analyzed systematically. Descriptive network models were prepared that simulated the information flows in the authorization system. Problems were identified in the analysis, and prescriptive measures were formulated to correct the problems. Most of the prescriptive measures were adopted by HQDA.

(2) The MOC study sponsor, MG Charles P. Graham, Director of Force Programs and Structure, Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS), requested that the methodology and results be briefed to the Director, Program Analysis and Evaluation (DPAE) and the Director of the Army Budget (DAB)--the Army programmer and the Army budgeteer, respectively. Following the briefing, CAA was tasked to analyze, in a similar manner, the Army PPBS. This study is tri-sponsored by the Army's planner, programmer and budgeteer.

1-2. PURPOSE. The purpose of the CAA study of the Management Analysis of Key Resources Operations (MAKRO) is shown in Table 1-1.

Table 1-1. The Purpose of MAKRO

- To analyze the Army resource planning, programing, and budgeting systems.
- To prescribe systematic measures for managing the preparation of resource justification documents.

The study places analytic emphasis on understanding and documenting the interrelationships of activities accomplished in each phase of PPBS. The documentation of the interrelationships serves as the basis for assessing the impact of prescriptive measures that correct problems identified in the analysis. The documentation can also serve as an Army-wide PPBS management tool for planning, scheduling, directing, coordinating, and controlling changes to the system.

1-3. OBJECTIVES. The seven study objectives specified in the tasking directive are indicated below along with an overview of how each was attained or attempted.

a. Determine the Activities in PPBS. This objective required that the PPBS be reviewed thoroughly and systematically. The PPBS phases were examined sequentially beginning with planning. To illustrate the size of Army PPBS, the number of activities in each phase greatly exceeded the preliminary estimates that were based on the MOC Study experience; in MOC, approximately 300 distinct activities were identified while in MAKRO, approximately 1,500 distinct activities were identified. The 1,500 work activities identified in the MAKRO analysis involve planning, programing, and the portion of budget formulation leading up to the submission of the President's budget to Congress.

b. Analyze the Interrelationships of Activities. The activities identified for the PPBS were analyzed. The MAKRO analysis addressed each individual activity in terms of successor and predecessor relationships, a description of the action performed, the organization performing the activity, and the amount of time used to accomplish the activity. Historical precedents for most of the activities were minimal and incomplete; calendar year (CY) 78--when the MAKRO analysis was performed--was, as usual, a year of change to every phase of PPBS. The changes were more dynamic than in other years and were being directed and implemented simultaneously. There was no detailed advance schedule for the year and none was possible. Accurate records of the activities and times were nonexistent. This required constant monitoring and analyzing of the actual implementation of the changes in order to accurately document the activities accomplished. Individuals' verbal descriptions of the activities and interrelationships were frequently the only source of data.

c. Represent the Activities as Network Models. The distinct activities were to be grouped together into descriptive network models based on successor and predecessor relationships. The activities were linked together into diagrams of processes to accomplish a specific objective; e.g., preparation of Joint Strategic Planning Document Supporting Analysis, Vol. I (JSPDSA I). The processes were ultimately linked together to represent the activities accomplished in a phase of PPBS; e.g., planning. Each process was reviewed by individuals who participated in the relevant activities. This quality assurance and verification procedure not only led to more accurate descriptive models, but also provided helpful feedback to PPBS participants on their contribution in the overall PPBS context.

d. Analyze Quantitatively the Network Models. Completion of this objective required the identification, collection, and verification of relevant quantitative data. Time data was the primary quantitative element collected. Initially, the study group also searched for workload data. No meaningful workload data are kept by the PPBS participants; even time data are limited to the actual elapsed time from receipt of a requirement to release of a response. The quantitative data--actual elapsed time--did support the analysis of the network models, the formulation of observations, and the evaluation of prescriptive measures.

e. Formulate Alternative Sequencing of Activities. This objective required the identification of scheduling difficulties and the formulation of alternative sequencing of the inherent activities. The scheduling difficulties were identified in accomplishing the preceding objectives. Using the network models and the

quantitative data, feasible alternative sequencing was developed for specific processes. Most scheduling difficulties resulted from milestones outside the Army's control.

f. Prescribe Measures to Facilitate Document Development. This objective involved generating management improvement prescriptions. Throughout the research and analysis effort, the group searched individually and collectively for problems inherent in the development of PPBS documents. The cause and effects of the problems were examined, and management prescriptions were formulated to correct the problems. The problems and resultant candidate prescriptions were considered based on the network models and were discussed with action officers at ARSTAF and MACOM levels. Interim management prescriptions were presented to the study sponsors at in-process reviews (IPR) in October 1978 and February 1979.

g. Reflect Planning in the Program and Budget. Attaining this objective required examining the interrelationships among the activities. Then the planning output information and guidance was compared to the program input requirements for information and guidance. The study identifies existing linkage activities from planning to programing and describes the shortfall between the output of planning and the input requirement for programing and budgeting. The study explains the difference and suggests ways to bridge the shortfall.

1-4. SCOPE. The MAKRO Study consists principally of an analysis of the HQDA level activities in planning, programing, and budget formulation. The MACOM and installation level activities included in the study address the HQDA guidance to the MACOM, the timing of the MACOM guidance to subordinate organizations, and the subsequent responses to MACOM and HQDA. No details are addressed on MACOM or subordinate organization activities. The activities analyzed are the actual CY 78 experience and reflect the CY 78 PPBS environment including both the DOD PPBS changes for the Consolidated Guidance (CG), zero-base budgeting (ZBB), and zero-base programing (ZBP), and the JSPS changes associated with the Joint Strategic Planning Document (JSPD). Projected CY 79 revisions to the Army PPBS are discussed in this report, and selected network models are provided on those revisions.

1-5. ASSUMPTIONS. The tasking directive established three assumptions for the study: no increases to administrative staffs; no changes to higher headquarters milestones; priorities given to Army activities could be changed. While the study was conducted subject to these assumptions, the analysis has resulted in the MAKRO observation that the second assumption should be challenged

CAA-SR-79-6

by the Department of the Army (DA). That is, changes to DOD milestones can have significant and beneficial impact on the Army PPBS.

1-6. CONTENTS OF THE REPORT. The following chapters, supported by technical appendices, represent the results of this management analysis of Army resource operations. Chapter 2 contains the research and analytical methodology employed in this particular management analysis study. In Chapter 3, the original federal and DOD PPBS theories are considered as an objective model of what is desired from a PPBS; then, the Army PPBS theory and application of the theory is examined. In Chapter 4, the environment and key operations that were examined during CY 78 and projected for CY 79 are discussed, and pertinent observations are drawn. Based on the systematic analysis of the individual phases, Chapter 5 presents an examination of problems and proposed management prescriptions. Subsequently, the interrelationships between phases were analyzed resulting in alternatives discussed in Chapter 6. The final chapter of the report presents the major observations pertaining to the Army resource management operations and PPBS. Appendices follow the chapters; Appendix E, Networks, is in two separate volumes (Volumes II and III). A glossary follows the appendices in this volume.

CHAPTER 2

METHODOLOGY

2-1. INTRODUCTION. This chapter provides an overview of the problem that led to the study approach and a discussion of the analytic elements of the study methodology. The application of the methodology to generate the analyses, observations, and prescriptive remedies is also discussed.

2-2. BACKGROUND AND PROBLEM ORIENTATION. The Planning, Programming, and Budgeting System (PPBS) is the paramount resource management system of the Army. In this context, the term system means a regularly interacting or interdependent group of activities with a unified purpose. The expressed purpose of the Army PPBS, as set forth in AR 1-1, is "to establish and maintain the Army's capabilities to accomplish its roles and missions and to insure effective use of resources." The Army PPBS meets the definition of a system because it involves interaction of interdependent activities. These activities define the capability required to accomplish the Army's objectives, translate those objectives into achievable actions in stated time periods (subject to resource limitations), and secure and expend resources necessary for those actions. The system involves hundreds of organizations performing thousands of activities every day throughout the world.

a. Characteristics of PPBS. The term "system" applied to PPBS indicates that it is comprised of interrelated activities; the magnitude and complexity of those interrelationships became fully evident during the research. An analysis of the time sequencing of the major phases (planning, programing, and budgeting) within a single PPBS cycle indicated two significant characteristics: (1) in some respects the system is sequential in nature (e.g., one phase is completed before the next begins), while in others it is overlapping (e.g., a follow-on phase may begin before the previous phase is completed); and, (2) the length of a single cycle is such that as many as five cycles may be occurring concurrently. Both of these characteristics are illustrated in Figure 2-1. The figure shows a six-year block of time and the cycles which initiate in that period. If we assume that the column labeled "Present FY" corresponds to FY 79, then reading from the top of the column, the following PPBS cycles are being influenced: (1) The FY 79 budget is being executed; (2) the budget formulated for FY 80 (to FY 84) is in its final justification before Congress; (3) the FY 81-85 program will be completed while the initial formulation of the FY 81 (to FY 85) budget has begun; (4) the FY 81-88 planning is completed, and the FY 82-86 programing will begin sequentially; and (5) the FY 82-89 planning will begin.

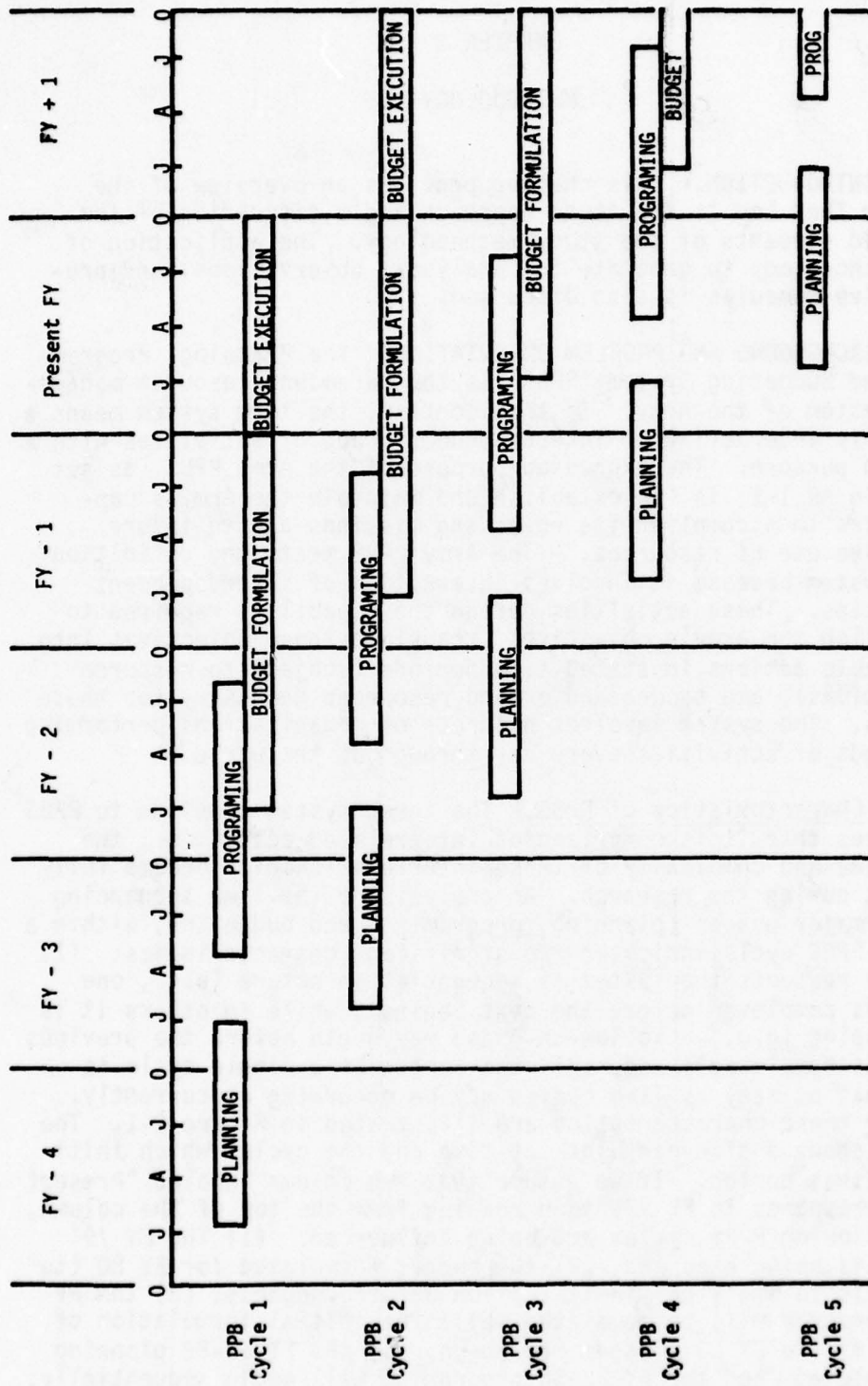


Figure 2-1. The PPB Cycles

Initial interviews with ARSTAF personnel rapidly surfaced a third significant characteristic--the system is dynamic--it reacts to change brought about by shifting management philosophies.

(1) Sequential/Overlapping Relationships. Conceptually, the PPB "system" is composed of phases which are interrelated by a requirement for: (a) the planning phase to provide input to the programing phase; and (b) the programing phase to provide input to the budgeting phase. Within the phases there are hundreds of processes and activities which interrelate to produce a coordinated plan, program, or budget. These processes and activities are interrelated in a variety of fashions, and many demonstrate a predecessor/successor type of dependency.

(2) Concurrent Cycles. Each year, the planning, programing, and budgeting phases are repeated. As illustrated in Figure 2-1, the three phases do not flow contiguously from planning through budgeting within a 12-month period. All of the phases take at least a year, and two of the three phases actually take well in excess of one year. Therefore, at all times, a portion of the ARSTAF is engaged in planning, a portion is engaged in programing, and a portion is engaged in budgeting. This can, and does, create confusion as to which phase and/or cycle is being considered.

(3) Dynamic Changes. From the beginning of this study, almost all interviewees emphasized that PPBS is an extremely dynamic system. Many of the key documents and milestones have changed since the system was established in the early 1960s. Since the system is essentially a management approach for decisionmaking, it is modified to reflect the management philosophy of the leadership at any given point in time.

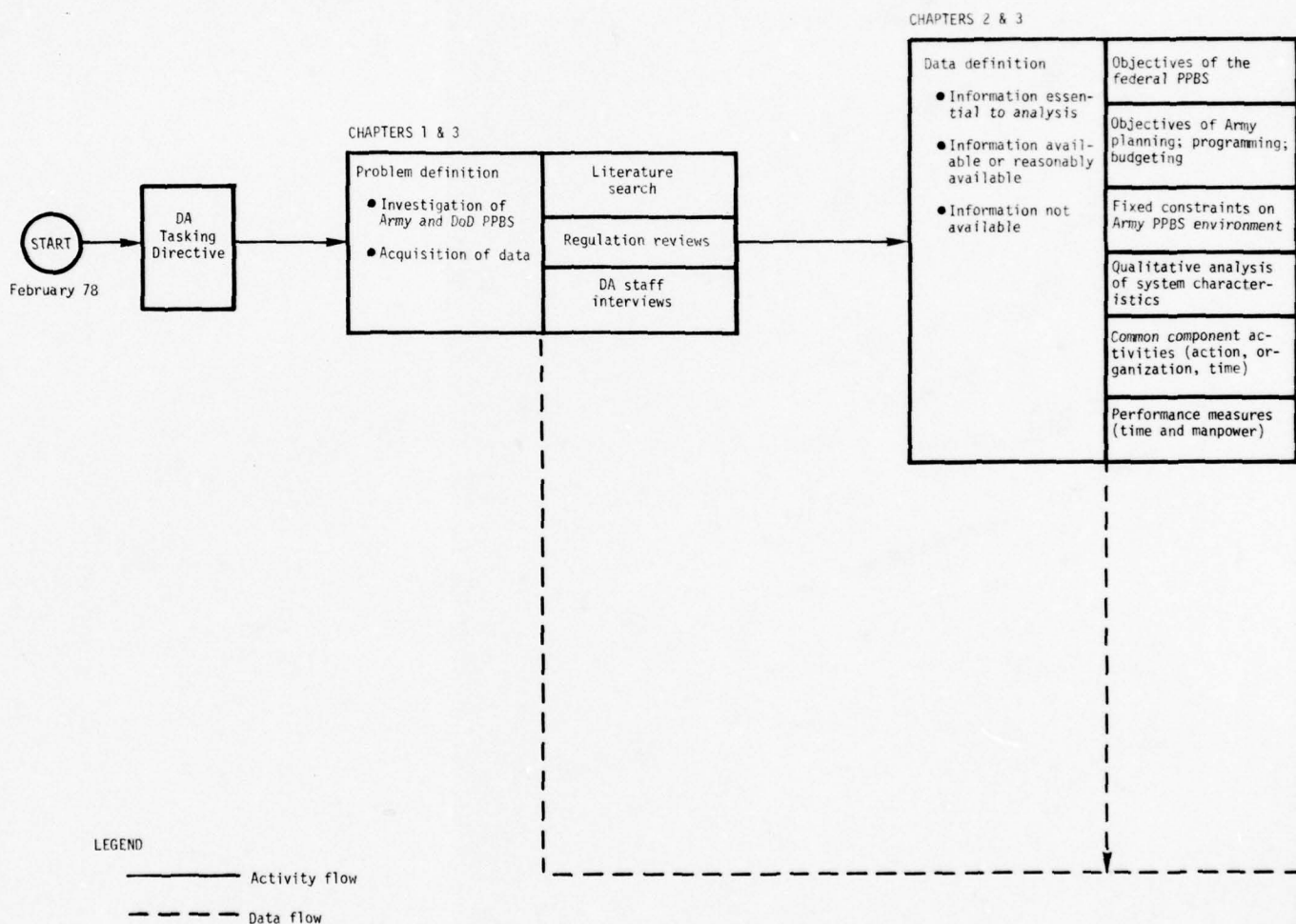
b. Study Approach. The host of activities, the diversity of the participants, and the continually changing nature of the system ordained that detailed documentation on the phases was minimal and outdated. Given this atmosphere, the MAKRO Study was initiated: to analyze the PPBS that existed and to prescribe systematic measures that would remedy problems identified in that analysis. The primary purpose of the study effort was to formulate the best integrated planning, programing, and budgeting system for the Army. The MAKRO analysis was directed toward: learning how the system operated; documenting the operations of the system and verifying the accuracy of that documentation; and evaluating the issues and problems identified in the current operation of the system. This required a specific methodology that would include a detailed logical structure in which to view, examine, and assess the interrelationships of the phases. Network theory was the prime candidate analytic methodology, but other techniques were also considered.

2-3. **MAJOR ANALYTIC ELEMENTS.** The MAKRO methodology diagram at Figure 2-2 depicts, in general form, the principal analytic constituents and activities of the methodology; chapter references are annotated at each block of the diagram to facilitate correlation of the methodology flow to this report. The respective blocks are described in more detail in the following subparagraphs.

a. Problem Definition. Investigative and problem definition work constituted the initial methodological venture, to explore the MAKRO problem parameters--the Army and DOD PPBS environment. Procedures for acquisition of relevant data included literature search, review of pertinent regulations, and personal interviews with ARSTAF personnel. Concurrent with each of these activities, construction of a data set was initiated to support subsequent methodology development and analysis. Existing processes, specific procedural activities, and ongoing and proposed system changes were reviewed in detail to identify important aspects of the design, functioning, and interrelationships of the several PPBS phases. The problem definition process was particularly significant in confirming that the PPBS is constantly in a state of change, and the change is essentially undisciplined.

b. Data Definition. Following problem definition, the next logical requirement was for data collection. From the outset, it was apparent that the volume of some aspects of PPBS information potentially available might well be excessive while, conversely, some important data might be difficult to find. Thus, the identification of vital data and categorization of that data into manageable sets, amenable to measurement and/or analysis, was imperative. The major data definition categories are as indicated in the right side of the data definition block in Figure 2-2.

c. Analytic Methodology Selection. A pivotal step in MAKRO methodology development was the selection of a management analysis technique suited to the requirement for detailed qualitative and quantitative analysis of not only each phase of PPBS, but of the linkage between phases. Structurally, each phase consists of a large number of events and supporting activities that interconnect in a predecessor/successor relationship to form procedural paths between activities. In general, the activities occur sequentially, each being dependent on some preceding activity, and ultimately all procedural paths converge at specified milestones (e.g., POM submission), thus comprising a network of interrelated activities amenable to being represented visually in some form of network diagram.



Chapter numbers refer to respective chapters of this report

QA = Quality Assurance process

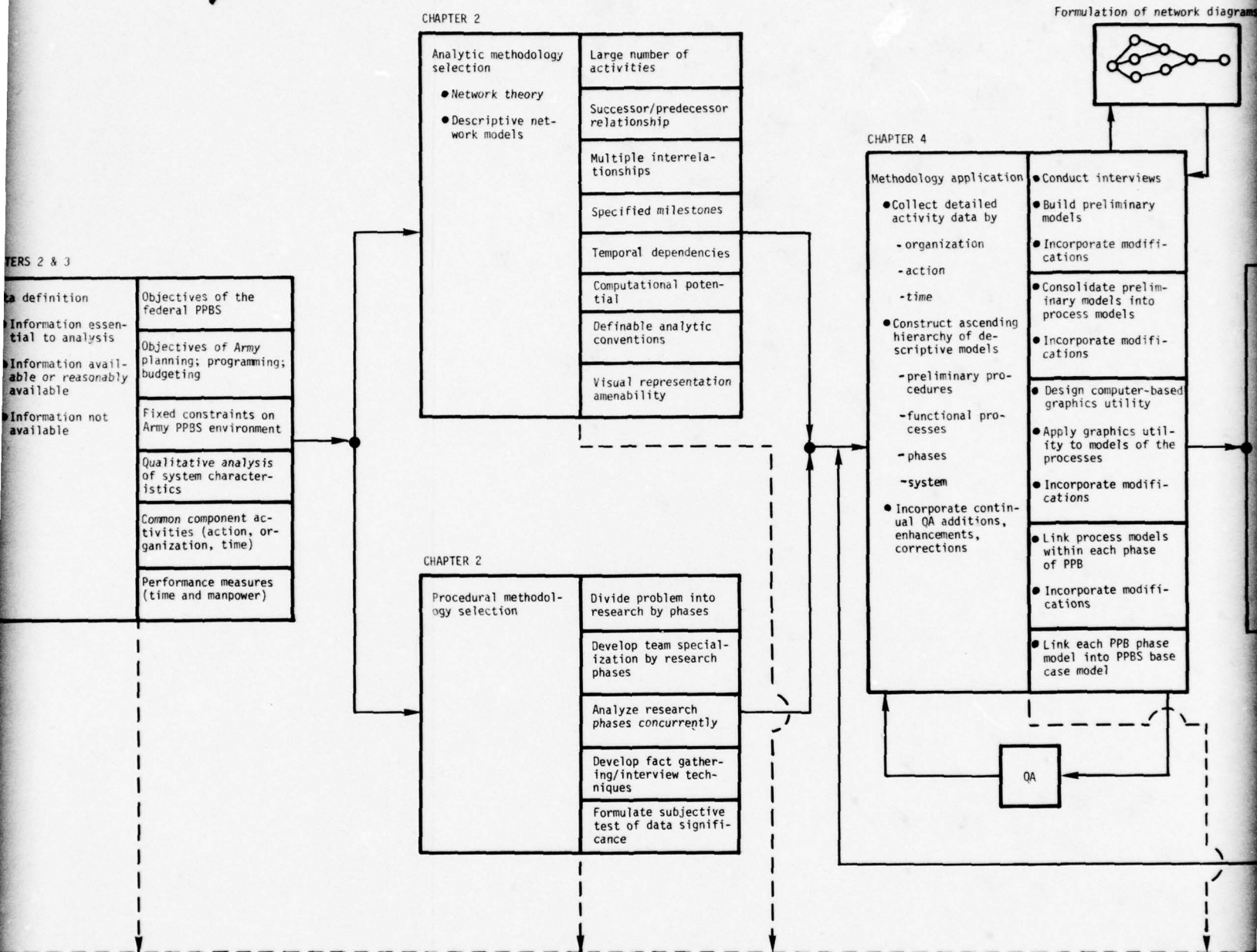
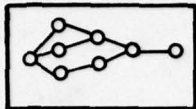


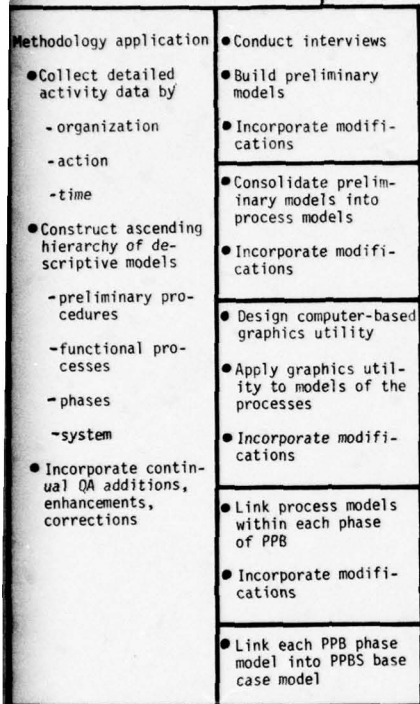
Figure 2-2. MAKRO Methodology

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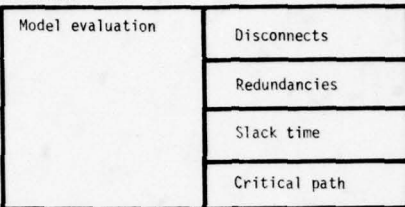
Formulation of network diagrams



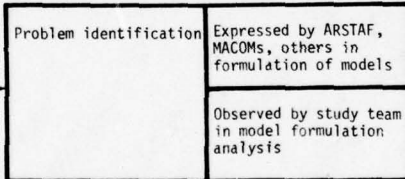
CHAPTER 4



CHAPTERS 5 & 6



CHAPTERS 5 & 6



CHAPTERS 5 & 6

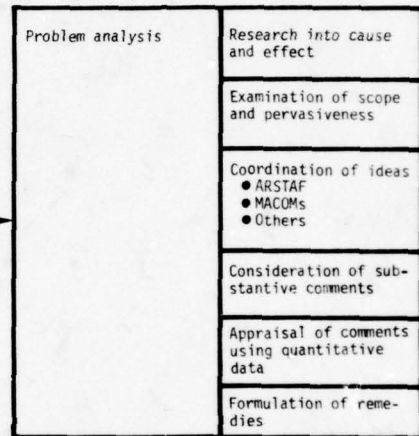
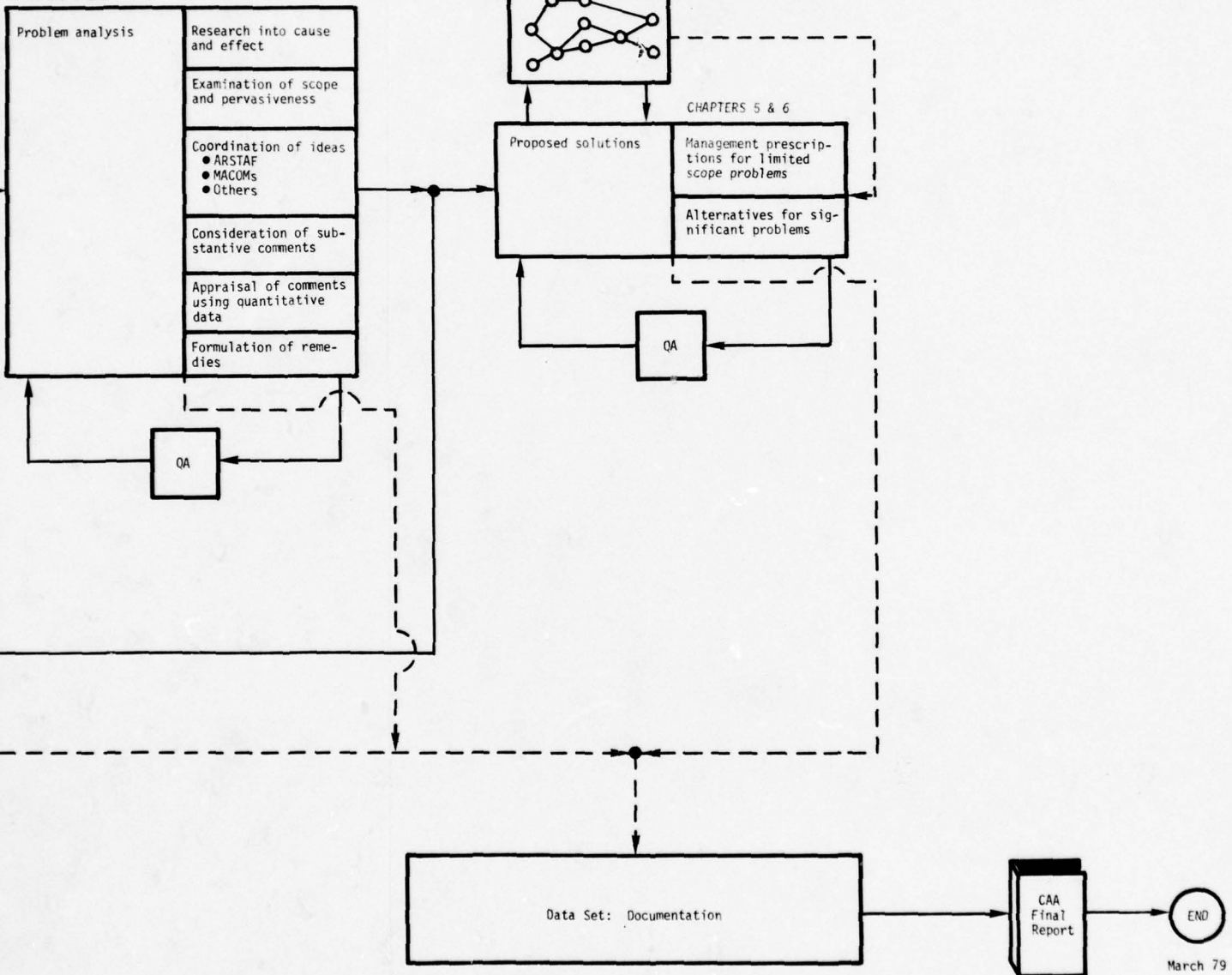


Figure 2-2. MAKRO Methodology

CHAPTERS 5 & 6



CAA-SR-79-6

(1) MAKRO Network Concept. Conceptually, such a network would be adaptable to established automated management analysis techniques such as a critical path methodology (CPM). CPM is a technique primarily concerned with obtaining the trade-off between cost and completion date for large projects.* However, as the accumulation of PPBS data continued, it became apparent that identification of a single critical path through any one PPBS phase was impractical; multiple critical paths exist. No existing automated analysis technique suitable to the problem could be found, so a computer-based routine for production of descriptive network diagrams was created to support manual analysis in the MAKRO Study. That routine, the MAKRO Graphics Utility (MGU), is described in Appendix F of this report; however, since some of the terms used in the network diagrams appear in the remainder of this chapter, the network terminology is described below.

(2) Network Terminology. Network models of activities, times, and schedules, such as those selected for MAKRO analysis, require terminology, symbology, and conventions that establish a basic discipline for network formulations.

(a) In targeting the MAKRO network formulation to Army PPBS management processes, several applicable terms and definitions facilitate understanding. They are tabulated in Table 2-1.

(b) Fundamental requirements for construction of time-dependent activity/event schedule networks include:

1. Specification of activities and events which constitute each network.

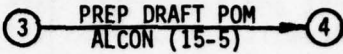
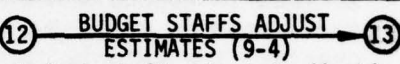
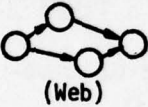
2. Definition of linkages of events and activities to reflect interdependencies.

3. Estimation of time required for each activity.** (MAKRO networks show time elapsed rather than time required, because the latter was not available.)

*Weist, Jerome D. and F. K. Levy, A Management Guide to PERT/CPM, Prentice-Hall, Inc., Englewood Cliffs, NJ, 1969.

**Greene, James H., Operations Planning and Control, Richard D. Irwin, Inc., Homewood, IL, 1967.

Table 2-1. Terms and Definitions

Term	Symbol	Definition	Example in MAKRO Context
Activity	XX (Arc)	Work being done appears above the arc; action agency and elapsed time below. Elapsed time (in parentheses) is in number of duty days and non-duty days.	 <p>Activity 3-4 starts at event 3 and ends at event 4. All concerned staff agencies and activities prepared draft POM; 15 duty days and 5 Saturdays, Sundays or holidays elapsed.</p>
(comment activity)	same as above	Commentary appears above and below the arc. (Elapsed time also appears in parentheses below the arc, but is not significant in this type activity.)	 <p>Budget staffs started adjusting estimates at event 12 and finished at event 13.</p>
Event	# (Node)	The beginning or end of one or more activities. An objective, an accomplishment, a starting point.	(see above)
Network	 (Web)	An ordered sequence of activities and events which represent a functional process.	Diagrams in Appendix E illustrate completed networks as defined in the MAKRO study.
Milestone	N/A	Network event of major importance, with a specific date constraint.	15 September is milestone for Army budget estimates to be submitted to OSD.
Process	N/A	A series of events and activities. MAKRO networks describe specific processes.	(See Chapter 4 and Appendix E)
Phase	N/A	Distinctive segment of PPBS, i.e., Planning, Programing, Budgeting.	Conceptually PPBS is comprised of sequential/overlapping phases starting with Planning, progressing through Programing and ending in Budgeting.
System	N/A	Collective term describing entire PPBS consisting of three major phases--Planning, Programing and Budgeting.	DOD PPBS, Army PPBS

(c) To extend such fundamental requirements to MAKRO network construction, Table 2-2 contains a list of building blocks to accentuate the component elements and actions in network composition.

Table 2-2. Network Building Blocks

- Collection of existing information (functional and temporal) on current PPBS phases.
- Selection and identification of milestone events and activity designations.
- Sequencing of interim events and activities, and establishment of interrelations; development of networks to depict a logical progression to completion of a process.
- Correlation of information on processes in order to formulate intra- and interphase linkages.

d. Procedural Methodology Selection. In conjunction with the selection of an analytic methodology, a procedural methodology suited to the magnitude, scope, and time available for the MAKRO effort was also required. The procedural methodology adopted was based on viewing the PPBS as three distinct phases: planning, programing, and budgeting; the latter phase was further divided into two subphases--budget formulation and budget execution. The study group was divided into two teams. One team was assigned to analyze planning and, subsequently, budget formulation. The other team was assigned to analyze programing and then budget execution. Procedurally, team members first gathered factual information through literature search and interviews with HQDA and MACOM staff personnel knowledgeable in the respective phases. This detailed investigation was instrumental in identifying quantitative factors--frequency of events and activities; activity/event schedules; elapsed time between activities; number of interactions; and workload volume--associated with each phase. The investigation further provided a basis for manual preparation of network activity flow diagrams that could then be discussed with HQDA and MACOM personnel to determine the significance of the activities and interrelationships thus defined.

e. Methodology Application. The selected analytic and procedural methodologies were implemented as shown in the methodology application block of Figure 2-2. Although entries in the block

are essentially self-explanatory, the importance of the design and use of a computer-based graphics utility cannot be overemphasized. The complexity of the individual PPBS phases, the frequency with which they interact, and the relative sensitivity of interactions posed particular challenges in identifying and describing critical events for each; synchronization of event schedules for individual or combined phases was a paramount consideration in the development of models of the PPBS processes. As an initial step, key processes within each phase were modeled descriptively through manual construction of flow diagrams depicting component events and activities. The resulting diagrams established an initial representation of functional and qualitative information (e.g., existence and interrelationships of process events and activities) from which more complete and comprehensive models could be developed. Construction of these models involved an iterative quality assurance sequence resulting in progressive refinement of information for the flow diagrams.

f. Model Evaluation. Initially, the continuing development and refinement of the PPBS process models and attempts to interrelate PPBS phases was expected to reveal: disconnects between activities and phases, redundancies of activities, critical paths within phases, and slack time. Redundancies and disconnects were found and are discussed in Chapters 5 and 6. As mentioned in paragraph 1-3d, no meaningful workload data--particularly, slack time*--could be obtained to support a critical path analysis. In addition, as mentioned in paragraph 2-3c(1) above, the profusion of crucial events within each PPBS phase made identification of single critical paths impractical. The models present a visual description of the activities within the PPBS phases and the interaction among the activities. During the conduct of the study, the models were accepted by HQDA and MACOM staff agencies as management tools to evaluate internal PPBS processes. The models can be used for the evaluation of proposed change in the context of the potential impact on the entire system.

g. Problem Identification. Preparation and development of the tentative process models described above served the MAKRO Study Group as valuable vehicles for discussion and review of PPBS processes with ARSTAF, MACOM, and other Army agency personnel experienced in various aspects of the PPBS. As individuals reviewed,

*More time available than actually required to accomplish a job not on a critical path. Wiest, J.D. and F.K. Levy, A Management Guide to PERT/CPM, Prentice-Hall, Inc., Englewood Cliffs, NJ, 1969, page 31.

discussed, and offered additional information or proposed changes to the models, related qualitative and quantitative problems not previously identified often emerged as by-products. Reciprocation of this step with the model evaluation step were key measures in identifying Army PPBS problems and bringing these problems into perspective.

h. Problem Analysis. With significant PPBS problems identified, the study group then directed its efforts toward delineating the problems into categories of cause and effect. The purpose of this procedure was twofold: (1) to identify problems in relative order of importance in terms of their scope and pervasiveness in the total system, and (2) to eliminate from consideration any problems that might disappear or become moot as a result of solving to a higher level or more fundamental problem. The problems delineated were discussed with ARSTAF, MACOM, and other experienced Army personnel and with the study sponsors at in-process reviews (IPR). In essence, the entire problem analysis procedure comprised a continual winnowing and refinement process, utilizing the quantitative and qualitative analytic measures considered most applicable.

i. Proposed Solutions. The final constituent step in the MAKRO methodology was the formulation of proposed solutions to PPBS problems, in two distinct formats. For limited scope problems (e.g., those peculiar only to a single PPBS phase), proposed solutions were developed in the form of management prescriptions--remedial actions that might be taken to save time, reduce the production workload, or otherwise improve current practices. For more significant problems (e.g., those that impact on more than one PPBS phase, such as disconnects or excessive redundancies of effort), proposed solutions were developed in the form of alternatives--major actions requiring higher level decision and approval. Computer-based network diagrams were again valuable adjuncts to the portrayal and evaluation of proposed solutions.

2-4. SUMMARY. To address problems in Army planning, programing, and budgeting, a combined quantitative and qualitative methodology was developed to deal with each of the separate phases and the interrelationships between phases. Fundamental to the application of the MAKRO study methodology development was the preparation and implementation of a unique computer-based network diagram utility package and the transformation of functional process structures related to each PPBS phase into technical network constructs. The network models developed in this study served as building blocks for derivation of proposed solutions and provided analytical tools for further utilization by HQDA, MACOM, and other Army agencies involved in PPBS management.

CAA-SR-79-6

CHAPTER 3

PLANNING, PROGRAMING, AND BUDGETING: THEORY AND APPLICATION

3-1. THE THEORY OF PPBS. An analysis of the Army resource management system, PPBS, and the formulation of prescriptive measures need to be based on an understanding of the theory of the system. The Army PPBS is a subset of the DOD PPBS, and the DOD PPBS was the model for the federal PPBS. The Army PPBS objectives emanate from the DOD and federal PPBS objectives. The phrase "planning-programing-budgeting" was used as early as 1954 in a book on Army program budgeting.* The present use of the phrase and the theory as applied in the Army traces from the initiatives of Secretary of Defense (SECDEF) Robert S. McNamara. In early 1961, the SECDEF noted the lack of a rational, systematic management process for making "sound decisions on the really crucial issues of national security." Each Service competed for a large share of the Defense budget and, within each Service, programs for strategic weapons competed with programs for tactical weapons. The SECDEF directed the implementation of a "Planning, Programing, and Budgeting System (PPBS)" to facilitate the management of the various DOD Services and agencies through comparative analysis across Service lines for similiar programs. In 1965, President Johnson extended the PPBS to all departments and agencies of the Federal government. In announcing this action to the cabinet members, the President noted that the system would, "improve our ability to control our programs and our budgets, rather than having them control us...."***

a. The DOD PPBS Model. The original objective of the SECDEF and his associates was to link planning and budgeting in a system designed to provide a sound basis for decisionmaking across Services. Defense planning and defense budgeting were essentially separate and unrelated efforts. Budgeting was accomplished through an annual submission to Congress. Budgeting generated an instrument that reflected the existing funded base and proposed the next year's incremental cost of government to that base.

*Frederick C. Mosher, Program Budgeting: Theory and Practice with Particular Reference to the US Department of the Army (Chicago; Public Administration Service, 1954) pp 47-77.

**Fremont J. Lyden and Ernest G. Miller, Planning Programing Budgeting: A Systems Approach to Management (Chicago: Markham Publishing Company, 1970) p 5.

A link between budgeting and planning was essential because of the gradual growth in the Department of Defense budget resulting from the cost of weapon systems. Weapon system costs increased tremendously and resulted in system acquisitions being stretched out over time to make purchases affordable. The impact of budgeting decisions was thus extended and often limited future options. This extension obviated to the SECDEF a requirement that the impact and desirability of such budget decisions be considered in light of future plans. Joint military planning was accomplished through the Joint Chiefs of Staff (JCS) and specifically the Joint Strategic Objectives Plans (JSOP; replaced by the Joint Strategic Planning Document (JSPD) in CY 78). The JSOP developed comprehensive military force requirements for 10 years into the future. But, JSOP force requirements greatly exceeded resource levels likely to be available in the budget. In merging the planning and budgeting process, the SECDEF envisioned a system that would address where to go from the present toward the future.

b. The Federal PPBS Model. The federal model emphasized the requirement for an analytic capability to bridge the gap between program proposals to meet the agency's objectives and the translation of the programs into budgetary data required for submission to and approval by the Congress. The federal PPBS was modeled after the DOD system described above. The formal instructions for the establishment of the federal system were first delineated in the Bureau of the Budget (BOB) Bulletin No. 66-3; specifically, the Bulletin stated that the system was based on three concepts:

"(1) The existence in each agency of an Analytic capability which carries out continuing in-depth analyses by permanent specialized staffs of the agency's objectives and its various programs to meet these objectives.

"(2) The existence of a multi-year Planning and Programming process which incorporates and uses an information system to present data in meaningful categories essential to the making of major decisions by agency heads and by the President.

"(3) The existence of a Budgeting process which can take broad program decisions, translate them into more refined decisions in a budget context, and present the appropriate program and financial data for Presidential and Congressional action."

3-2. THE ARMY PPBS THEORY. The Army interpretation of the PPBS theory is described in AR 1-1. The regulation was last revised in May 1976, and many of the documents and milestones in the regulation are obsolete today. The theory, as a complement to the DOD theory, is as valid today as when the regulation was written. Army PPBS continues to respond to and be dependent upon the key documents and milestones of the DOD PPBS and the Joint Strategic Planning System (JSPS). The AR describes Army PPBS as "an evolutionary process rather than a static system." In the Concept paragraph, the AR emphasizes the paramount importance of realistic force planning "for the accomplishment of established national security objectives." Subsequently, resource "constraints are applied in developing the proposed force structure." Then, "the risks imposed by the resource constraints on the Army's capability to execute the strategy" are considered. The AR, Concept paragraph, emphasizes force development as the cornerstone of the Army PPBS (see Appendix D for a discussion of force development). The Army PPBS is described as three distinct phases, one each for planning, programing, and budgeting; budgeting is further divided into budget formulation and budget execution subphases. Each phase occurs annually, and all are ongoing throughout the year. (Planning does not take the first four months, then programing the next four months, and budgeting the final four months.) The complexity of the system is intensified by guidance and feedback mechanisms which exist in each phase, (a) between the phases within the Army and exterior to the Army, and (b) between the Army and subordinate headquarters. There is a near constant flow of guidance and responses, with various iterations resulting in frequent revisions and updates. The revisions and updates create a tremendous workload not particularly evident in the regulation but discussed in this study. The next three subparagraphs highlight planning, programing, and budgeting, respectively, as described in AR 1-1.

a. Planning. Army planning "addresses the development of the defense policies and military strategy for the attainment of national security objectives in determining the force objectives, force capabilities, and resources required for the execution of Army roles and missions in support of the objectives and strategy." The emphasis of planning is on the identification of the forces deemed necessary to attain the national security objectives, and the assessment of the risk associated with lesser forces. Planning assesses the risk associated with the programing force which cannot achieve planning force objectives. The Army planning system also addresses current force capabilities to provide a basis for contingency planning for appropriate major commands.

b. Programing. Programing "is the translation of OSD [Office of the Secretary of Defense] planning and programing guidance into a comprehensive and detailed allocation of forces, manpower, and funds for a five-year period." The initial programing activities deal with the development of the program force, through the Total Army Analysis processes. "This analysis develops the Program Objective Memorandum (POM) force--an approved force structure which contains not only the major combat forces but also the combat support and combat service support forces which form the basis of the programs in the POM." The Army POM is the focal point of program development activities. "The POM is published in May and describes all aspects of Army programs highlighting the forces, manpower, materiel acquisition, distribution, and logistic support required to meet the strategy and objectives specified by the SECDEF." This informational output of the POM requires a rich diversity of input information. The POM assimilates OSD guidance, ARSTAF force and non-force proposals, and subordinate command recommendations into a balance of resources within OSD specified levels. The post-POM programing actions are a series of interchanges between the Army and OSD to secure SECDEF approval of the program recommended in the POM. The SECDEF's final program decisions are published in the Amended Program Decision Memorandum (APDM) and, "The first year of the approved program serves as the basis for the development of the Army Budget Estimate (ABE)."

c. Budgeting. The Army budget "is the detailed expression of approved plans and programs in terms of resources required." Budgeting is actually divided into two subphases:

(1) "Budget formulation is the process of developing detailed fund estimates to support plans and programs." OSD budget guidance, the Army POM as modified by the APDM, and submissions from subordinate commands are assimilated into the Army Budget Estimate. The ABE expresses the Army's resource requirements in detail sufficient for OSD, Office of Management and Budget (OMB), and Congressional review.

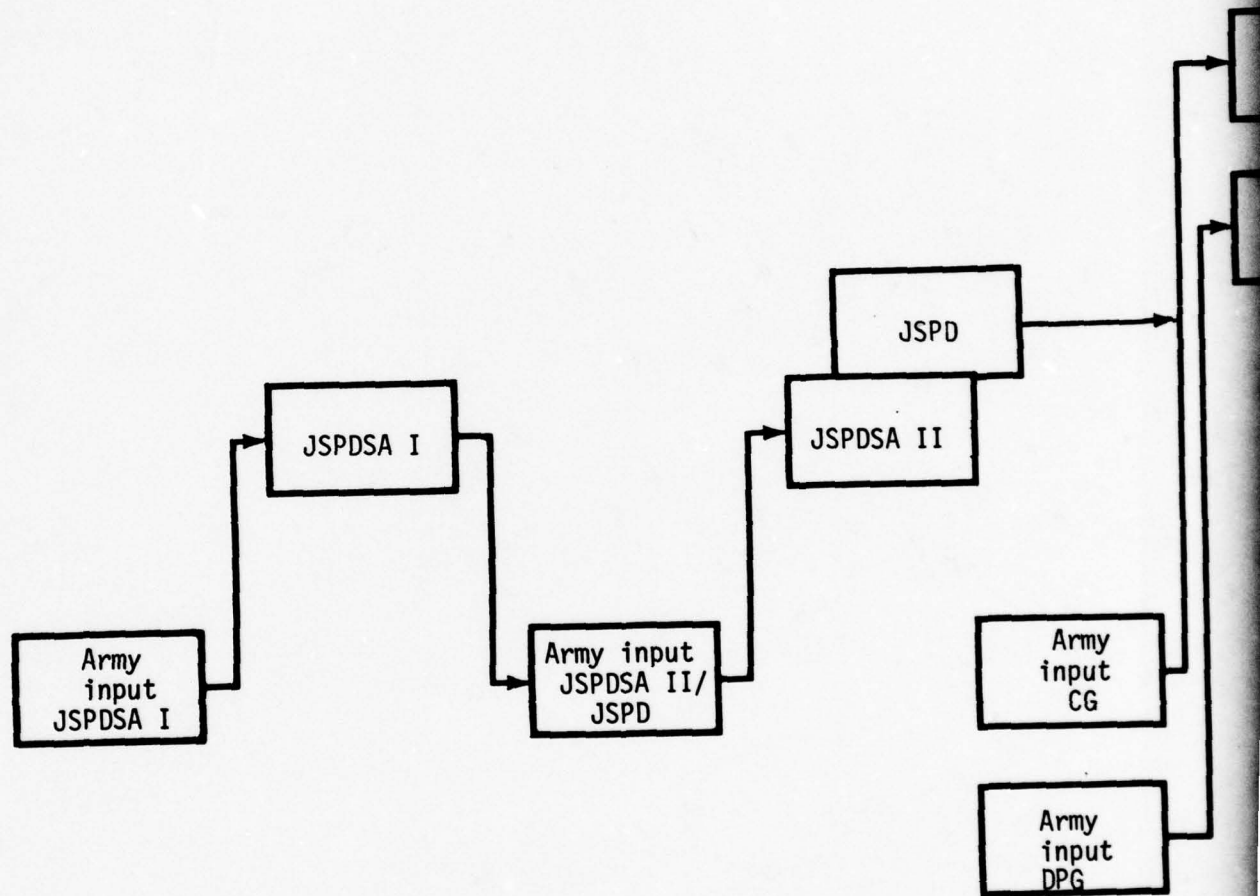
(2) "Budget execution is the development and maintenance of operating and investment budgets necessary for execution of approved programs. It includes apportionment requests and allocation, obligation, expenditure, and reporting of funds." These activities occur after Congress has approved the funding, manpower, force and major items of equipment levels for the Army. The amounts spent by the Army commands during the course of the year are monitored continually to insure obligations and expenditures are within the levels allocated.

3-3. THE APPLICATION OF PPBS IN THE ARMY. From February 1978 through March 1979, the MAKRO Team studied and analyzed the PPBS operations. In that examination of the calendar year (CY) 1978 PPBS activities, the realities of the simple merger of planning and budgeting were recognized as very complex. The Army and the DOD PPBS require numerous formal information exchanges between the Army and higher authorities--Joint Chiefs of Staff, Office of the Secretary of Defense, Office of Management and Budget, and Congress--and the Army and subordinate headquarters. All of the exchanges require quick responses to questions posed by the higher authorities. This whole interactive and highly reactive implementation of PPBS actually reduces the time available for analysis. The following material discusses the systematic dialogue first between the Army and higher authorities and then between the Army and operational headquarters.

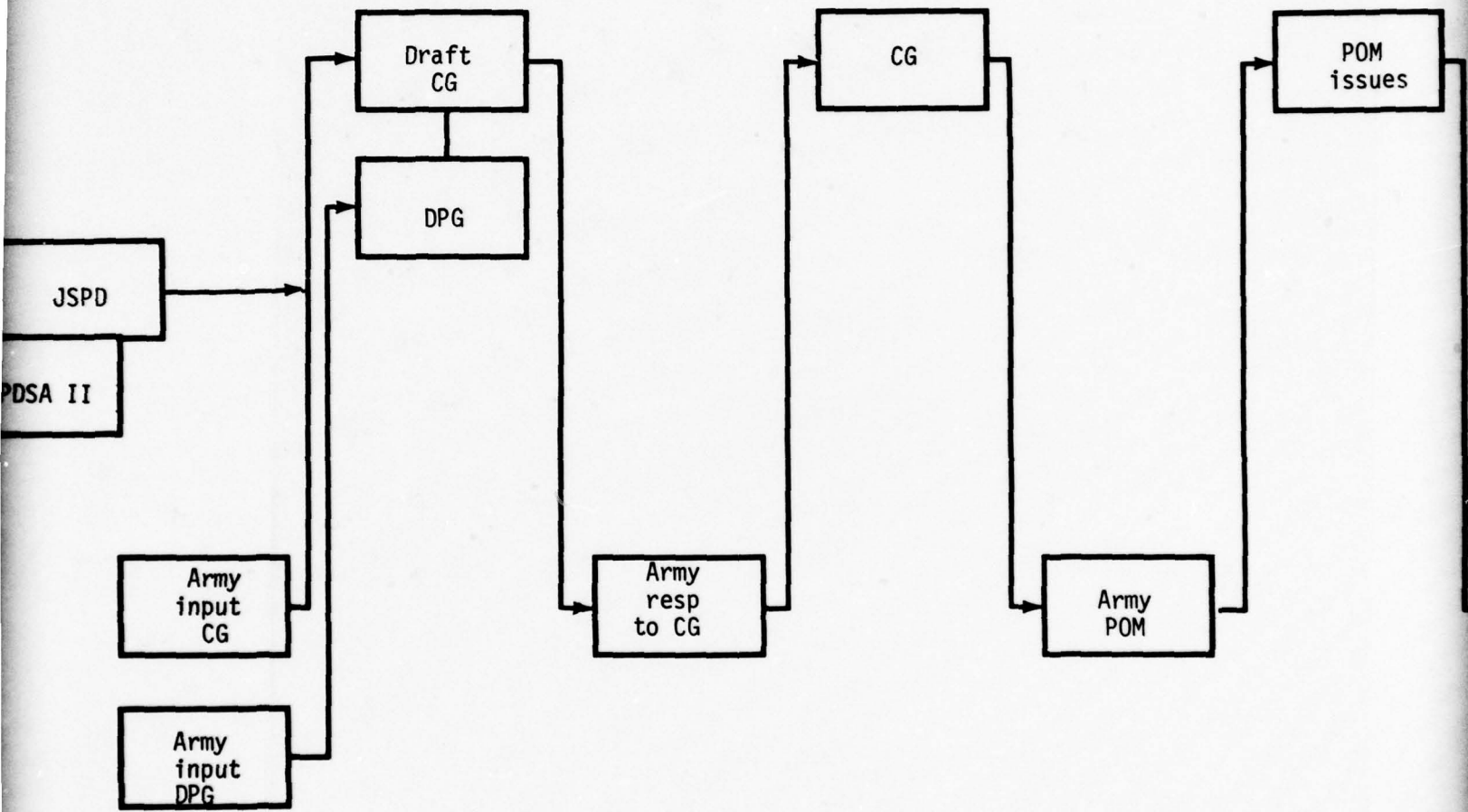
a. The Army to Higher Authority Interchanges. An overview of the sequence of events between the Army and higher authorities as observed during the analysis is discussed (see Figure 3-1). The actual chronology of these events in CY 78 is discussed in paragraph 3-4c below. Army PPBS begins with Army input to the Joint Strategic Planning Document Supporting Analysis (JSPDSA), Part I. Following JCS approval, JSPDSA I is used by the Army to develop force requirements. Army force requirements are provided to the Joint Staff for consideration and incorporation into the JSPDSA, Part II. The JCS approved force requirements are published and provided to OSD with the stated intent of influencing the draft OSD Consolidated Guidance (CG). In addition, the Army provides unilateral planning input to OSD for use in the development of the Defense Policy Guidance (DPG). The DPG and draft CG are released by OSD and reviewed by the Army; comments are provided back to OSD. The final CG contains the policy and program guidance for the Army to complete the POM and for the Joint Staff to begin the next JSPDSA I cycle. The Army POM provides the Army program decisions and resource requirements to the Assistant Secretary of Defense (ASD), Program Analysis and Evaluation. The OSD staff and the Army then participate in a series of issue dialogues; the OSD analysts raise specific issues and the Army analysts attempt to answer the questions informally. At the completion of the issue cycle, the SECDEF formally provides the remaining issues of disagreement in the Program Decision Memorandum (PDM). The Army prepares a formal reclama to the SECDEF. The SECDEF considers the Army reclama and the comments of OSD analysts in making final program decisions. These decisions are reflected in the APDM. The APDM provides a resource base line that is used as guidance for finalizing the Army Budget Estimate (ABE). The ABE is submitted to the OSD Comptroller for a series of reviews. The OSD staff and OMB analysts review the budget document and return decision

package sets (DPS) on scores of issues which either approve or revise the resource levels, the priorities, or other details. The ARSTAF may reclaim the DPS. The reclaim process is iterative and may result in one or more submissions; ultimately, OSD issues a final DPS. The ARSTAF reviews the final DPS and prepares a response on the major issues for the Secretary and Chief of Staff of the Army to use in a meeting with the SECDEF. Subsequently, the SECDEF meets with the President and the outcome of that meeting is provided to the Army for finalization of the Army budget prior to incorporation into the President's budget. The President's budget is provided to Congress where reviews are conducted by the Congressional Budget Office (CBO), the House Armed Services and Appropriations Committees, the Senate Armed Services and Appropriations Committees and the respective subcommittees of each. The Army provides witnesses to the various committees in order to explain and defend its resource requests. Both the President and Congress are concerned with the absolute amount provided to Defense in light of the total federal budget request, the national revenues available, and competing demands for the federal expenditures. During and after the budget hearings, Congress evaluates the Army and total DOD budgets, and develops a national budget for the United States. The final Congressional decisions result in the appropriation of funds for execution in the budget year; the Army then allocates the funds to the various operational commands. The commands, in turn, suballocate the funds to the hundreds of work centers where the budget is executed. Expenditures are recorded in automated systems, and that information is provided to the Department of the Treasury.

b. The Army to Operational Headquarters Interchanges. The overall interface between HQDA and operational headquarters is discussed in (2) below. A simple overview of the application of PPBS within the Army is far more difficult to develop than that between HQDA and higher headquarters. In the latter case, the informational exchanges are much more sequential and comprehensive; the flow is clear from a guidance to a response. Within the Army, the flow is far more complex: multiple guidance often is keyed toward a single response; a single guidance document may result in multiple responses; and a single response is often not a comprehensive statement of the organization's requirements. Much of the information required in PPBS is centrally developed by the ARSTAF or developed through an appropriation channel; i.e., the AR 1-1 planning requirements and the Military Personnel Army (MPA) requirements are centrally developed; the Military Construction Army (MCA) and the acquisition requirements are developed through appropriation channels from HQDA to the command counterparts.



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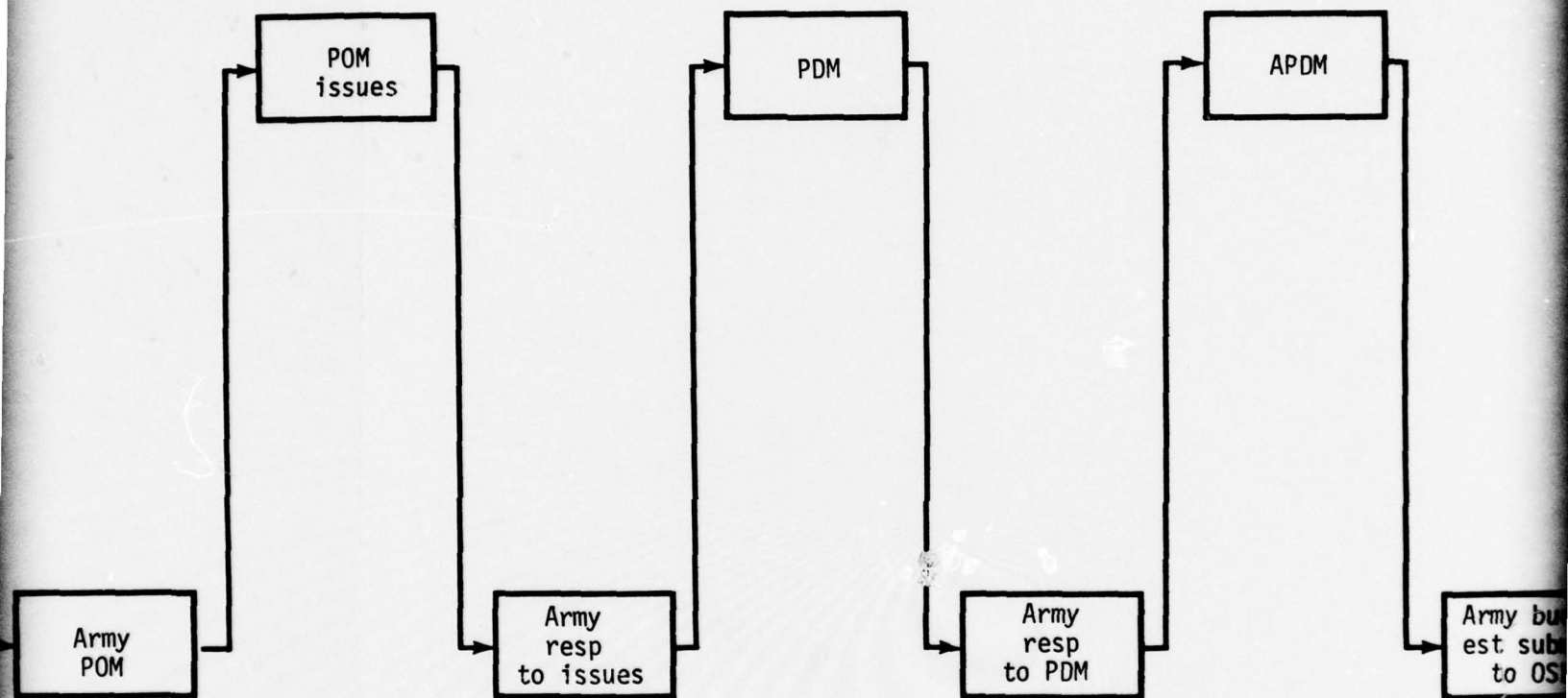
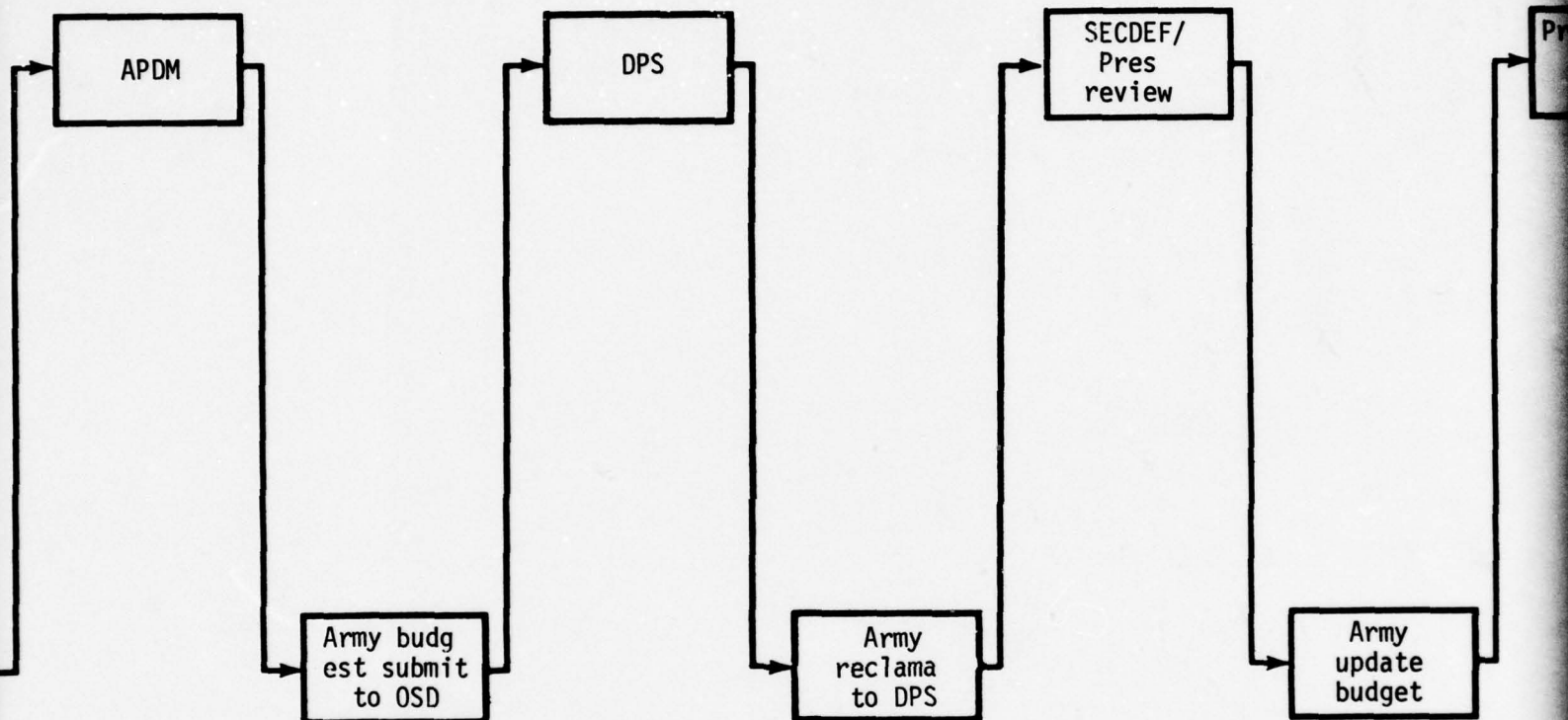


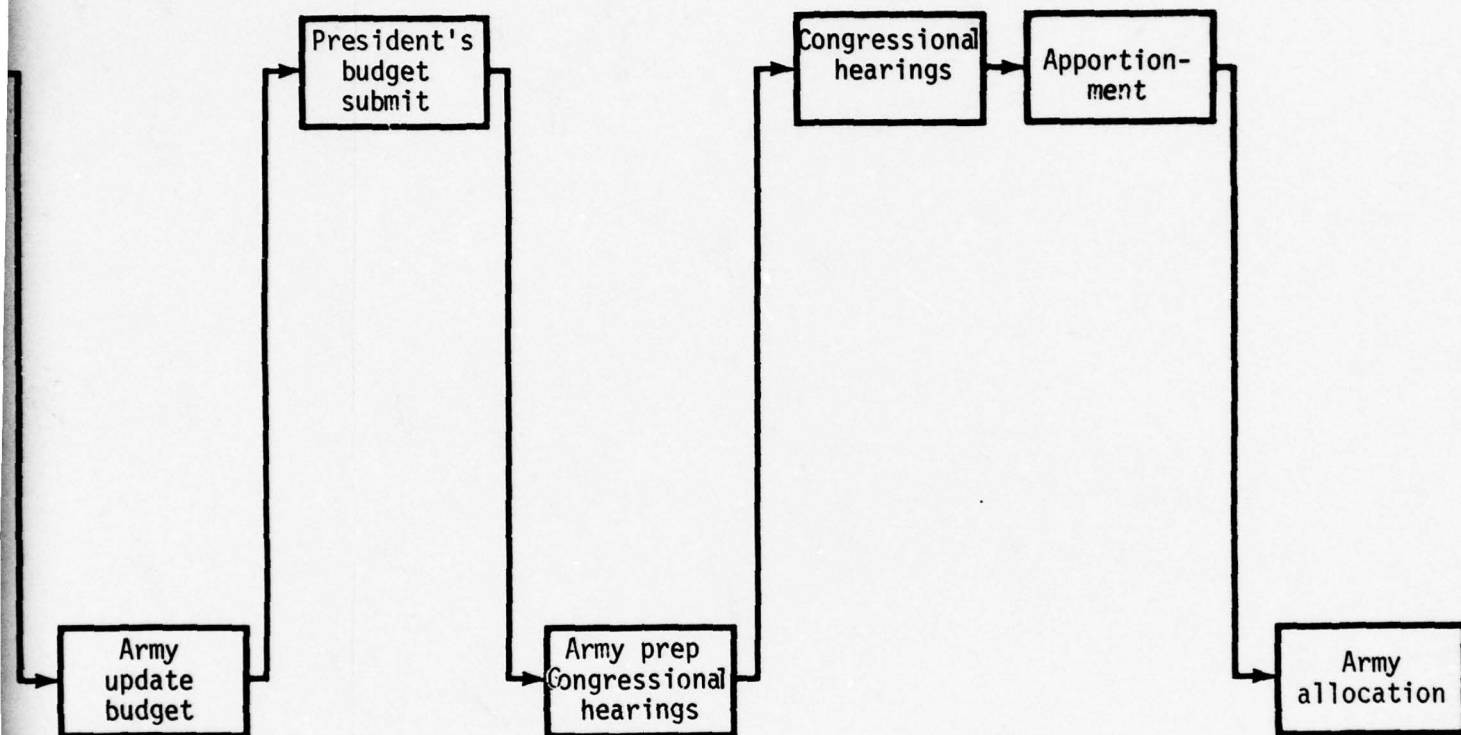
Figure 3-1. Army to Higher Authority Interchange

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Authority Interchange

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CAA-SR-79-6

(1) The Army Staff Role. The role of the ARSTAF is not obvious in Figure 3-2. However, a general appreciation of the staff's environment and role is essential to assess clearly the larger intra-Army PPBS dialogue. The ARSTAF is subject to continual PPBS guidance changes, expected to respond on a near real-time basis, and responsible for the success of the PPBS. The staff uniformly uses all the people available to respond with the best product possible within the time allocated. In addition to the continual PPBS activities, the ARSTAF concurrently performs non-PPBS activities.

(2) The Interchanges. The operational headquarters interchange with DA is discussed sequentially from planning to budgeting and is so illustrated in Figure 3-2. The interchange is described in terms of the CY 78 experiences and CY 79 projected programing and budgeting events. Miscellaneous submissions from the MACOM are considered informally by the ARSTAF in the preparation of the JSPDSA I input. The JCS forwards the JSPDSA I to the worldwide Commanders in Chief (CINC) for their appraisal and assessment of force requirements. The CINC input is provided to both the ARSTAF and the JCS; the ARSTAF considers the CINC input in formulating the Army input to JSPDSA II. The programing dialogue initiates with draft Program Analysis and Resource Review (PARR) instructions from HQDA. The draft PARR instructions are followed by the PARR instructions and then the Preliminary Army Planning and Programing Guidance Memorandum (PAPPGM). The MACOM respond with the PARR. HQDA assimilates the President's budget and provides the January Program and Budget Guidance (PBG). The January PBG is both a programing and a budgeting document; the budgeting dialogue initiates at this point and proceeds in parallel with the programing dialogue. The final programing guidance is the Army Planning and Programing Guidance Memorandum (APPGM). The January PBG and APPGM are applied by MACOM in the Program Analysis and Budget Estimates (PABE) submitted to HQDA. The PABE is used in completing the Army program recommended in the POM. After the January PBG, HQDA next issues Command Operating Budget (COB) instructions to MACOM. The MACOM consider both the January PBG and COB instructions in formulating MACOM COB preparation instructions for subordinate organizations. The subordinate organizations prepare and submit a COB request to MACOM. Based on the Army program recommended by the SECDEF in the POM, HQDA issues the May PBG to MACOM. The May PBG is the final budgeting guidance. The MACOM use the May PBG and the installation COB requests to finalize the MACOM COB for submission to HQDA. The ARSTAF uses the Congressional appropriation and MACOM COB to allocate the resources to the operational headquarters. The operational headquarters execute the resources allocated.

3-4. SUMMARY

a. Federal and DOD PPBS Theory. The theory of the federal and DOD PPBS as envisioned by President Johnson and SECDEF McNamara was to analyze program proposals with respect to meeting agency objectives and to translate the proposals into budgetary decisions.

b. Army PPBS Theory. The theory of the Army PPBS is to develop a force to meet the national security objectives and then temper that force based on resource constraints to develop budgetary requests.

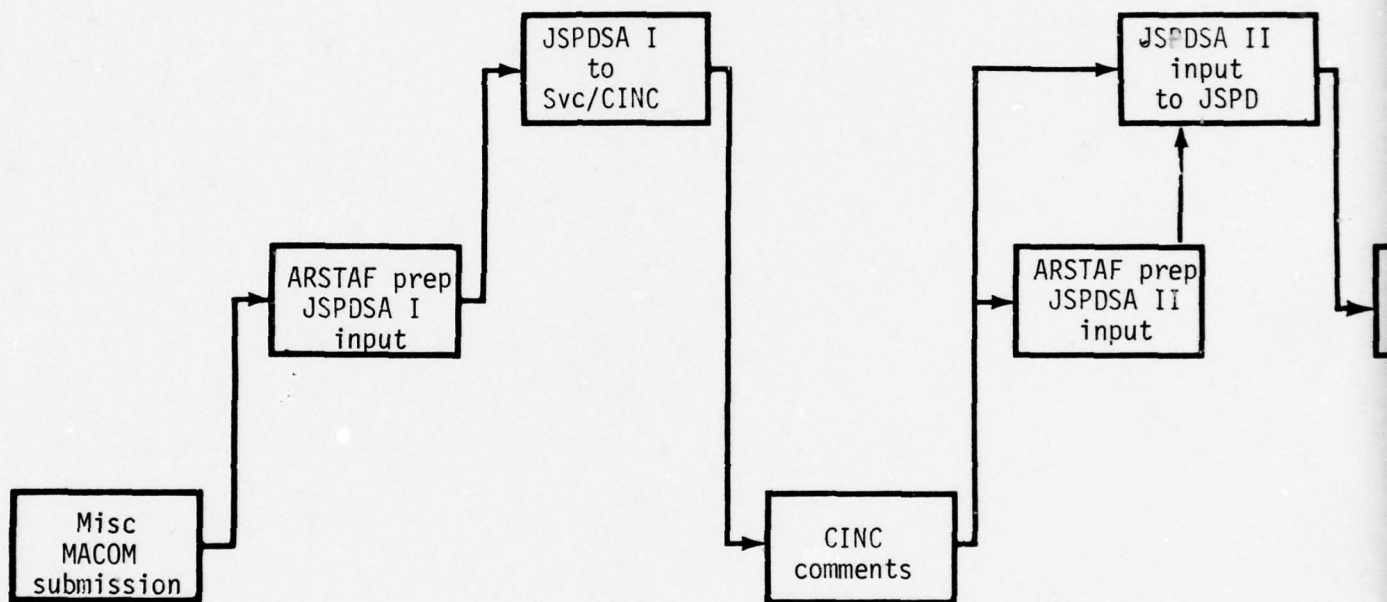
c. Army PPBS Applications. As was the case before PPBS, planning continues to develop force requirements to attain the national security objectives in the event of hostilities. Those forces exceed the resources that can be reasonably anticipated in a peacetime world. Programing and budgeting develop from a continual stream of DOD guidance and Army responses. In practice, the Army interacts to respond to the DOD PPBS milestones at the expense of time for analysis. There simply is not time in the current, highly interactive schedule for the Army to execute a program of special analyses. This point is illustrated in the Army to higher authority interchanges at Figure 3-3.

(1) In the Army to higher authority dialogue, the quantity and frequency of the informational exchanges are significant and leave little time between iterations for analysis.

(a) From the initial Army input to the Joint Staff, to the ultimate appropriation from Congress, a period of 30 months elapses; from the subsequent Congressional appropriation to the completion of the budget year, another 12 months elapse. The PPBS sequence extends for some 42 months; excludes preparation time for initial Army input to JCS.

(b) From the initial Army strategy input to the initiation of Congressional hearings, a period of 24 months elapses. The Army requirements are reviewed by higher authorities a total of 12 times during the 24 months; i.e., JSPDSA I, JSPDSA II, JSPD, draft CG, etc. DA and higher authority are continually participating in the decisionmaking process.

(c) Most of the participation or iterations are in the programing and budgeting phases of PPBS. During the 14 months from the preparation of input for the draft CG to the initiation of the Congressional hearings, the Army provides eight submissions to DOD and receives seven sets of feedback guidance.



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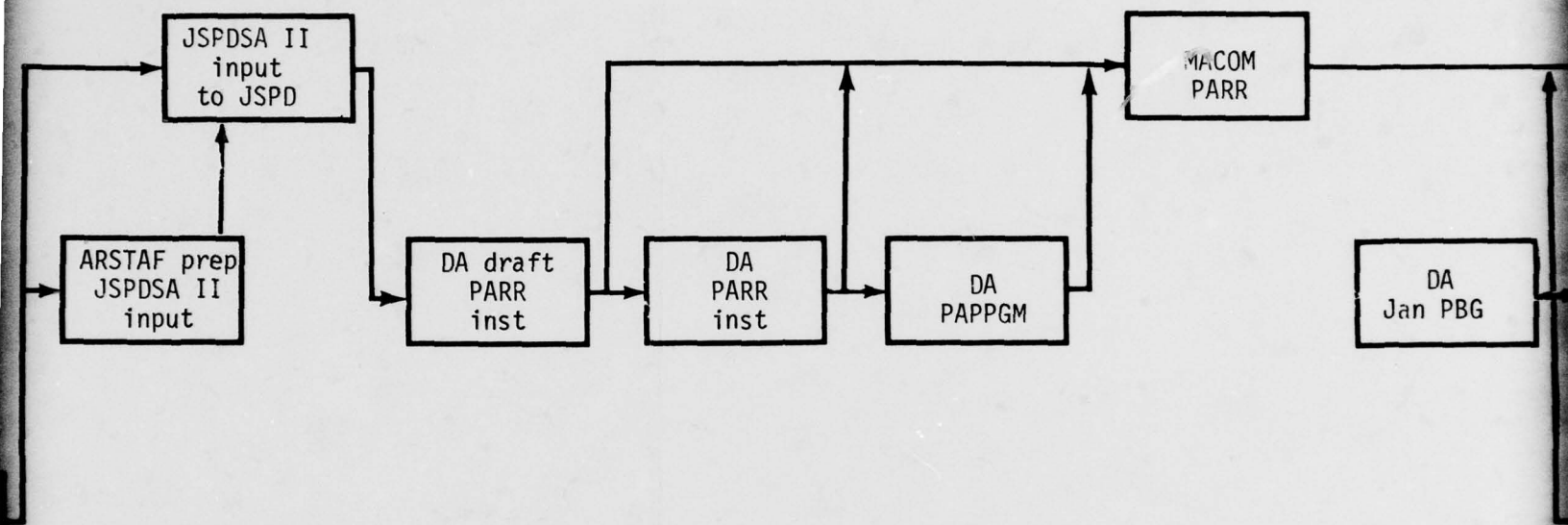
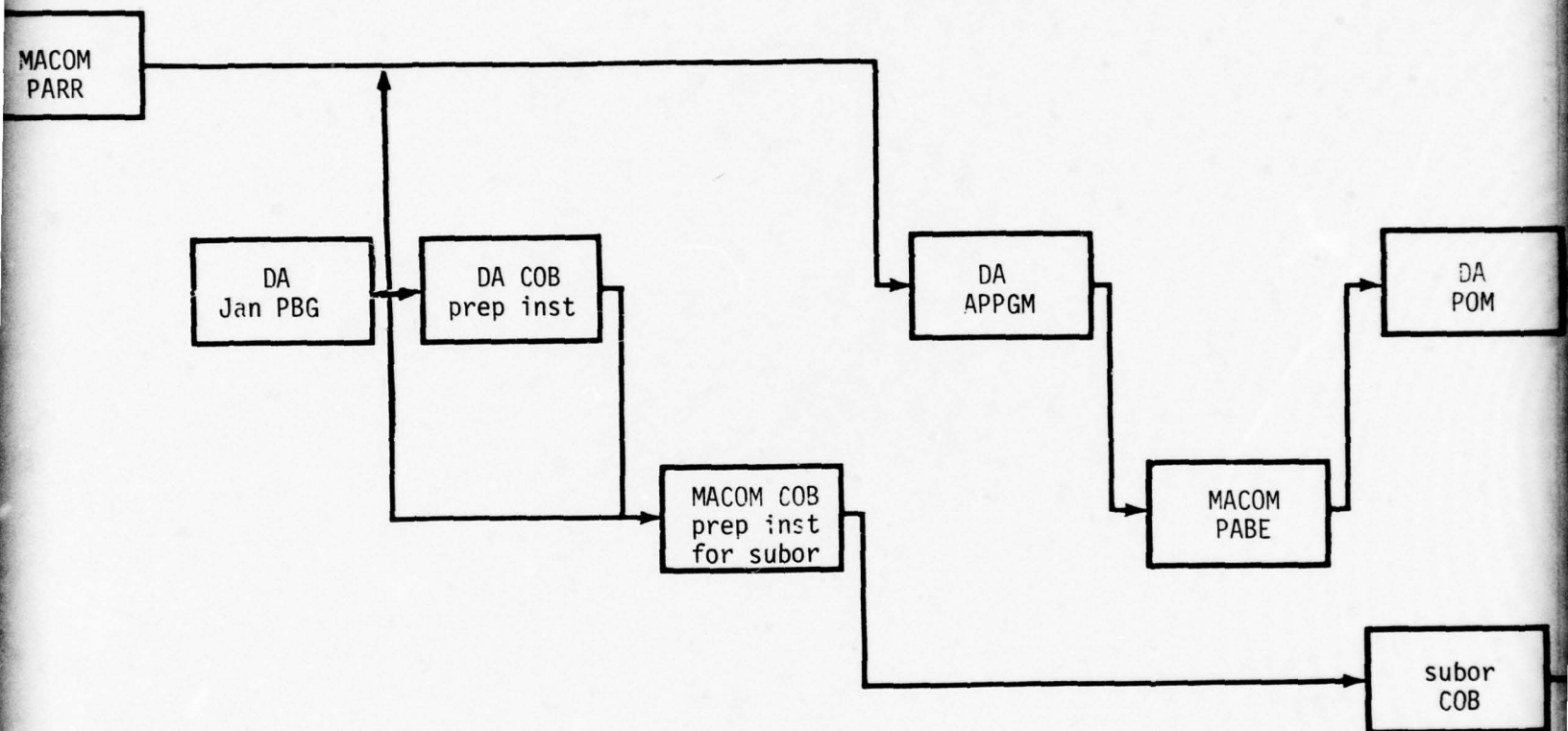
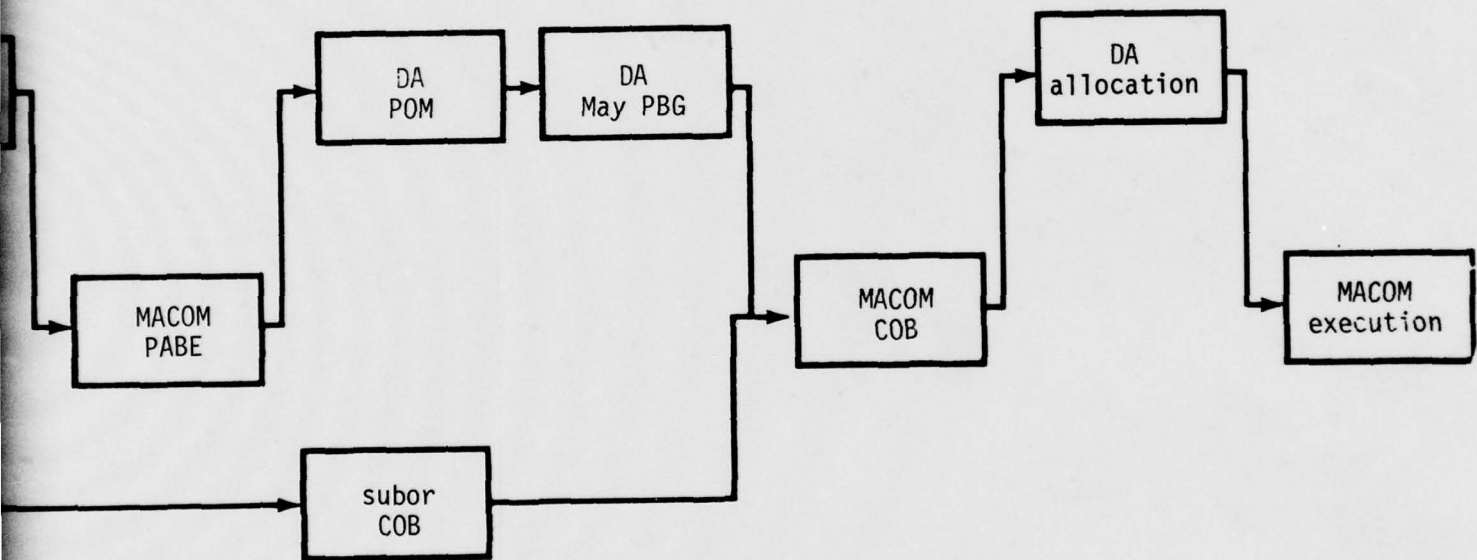


Figure 3-2. HQDA to Operational H

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to Operational Headquarters Interchange



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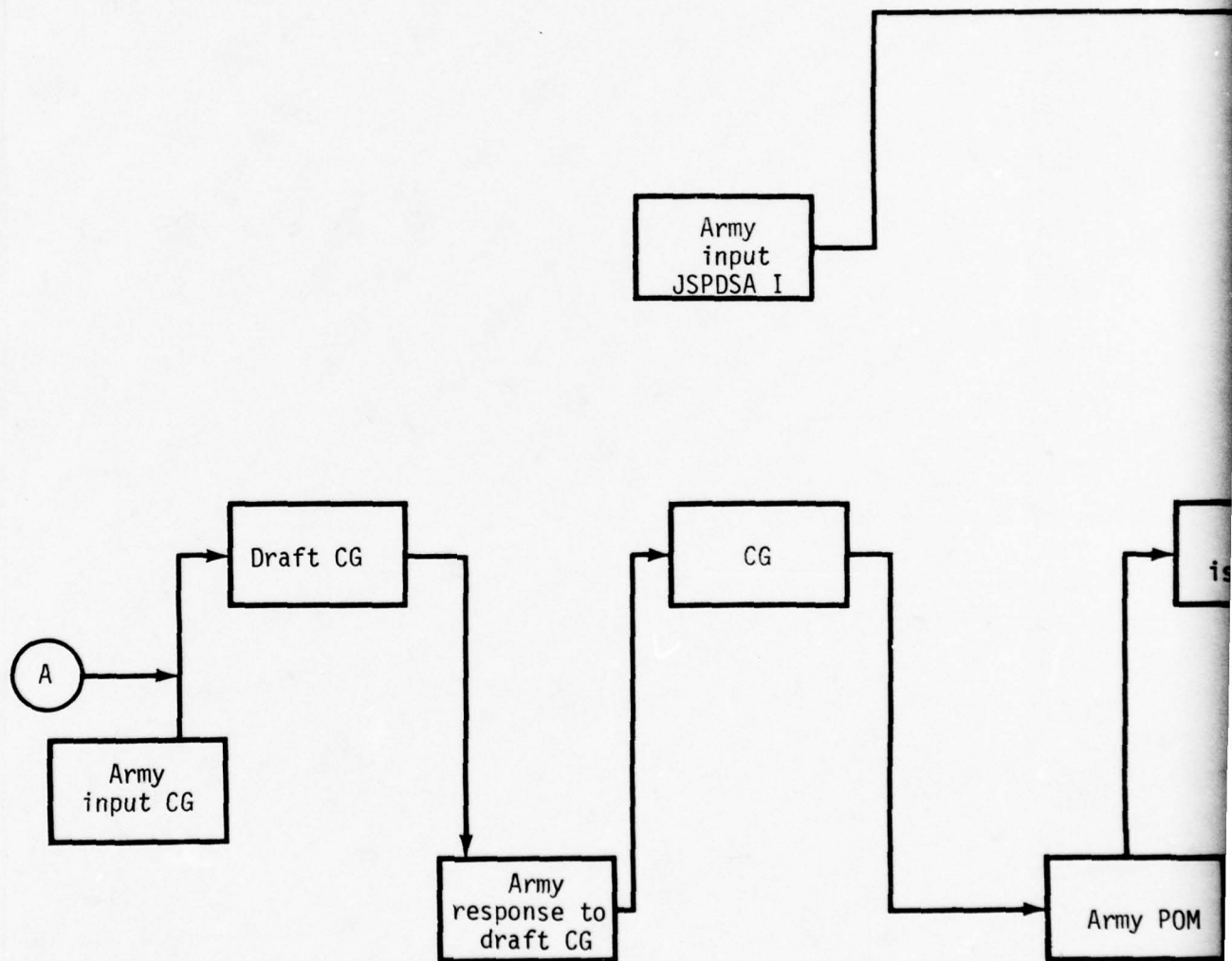


Figure 3-3. Army to

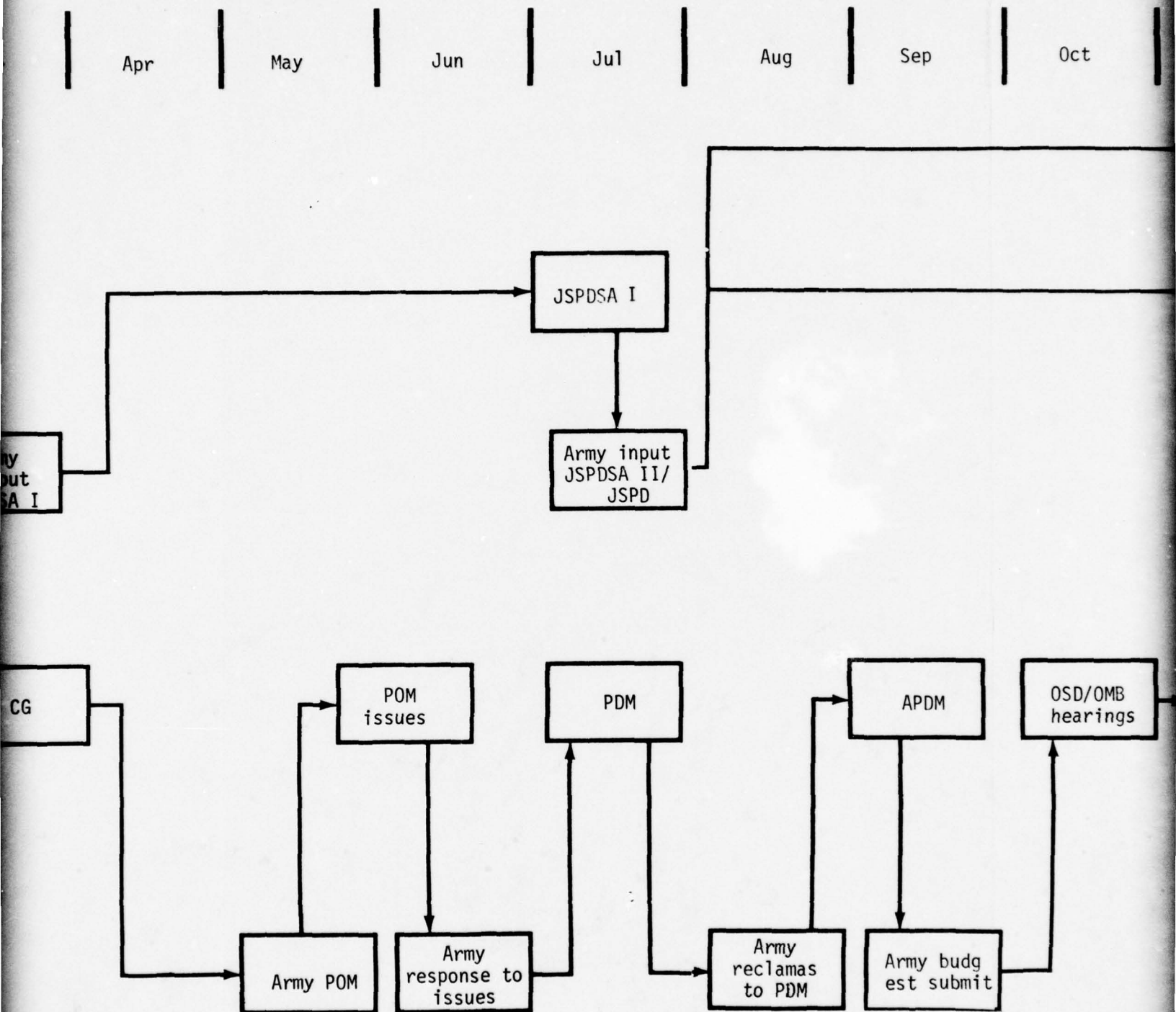
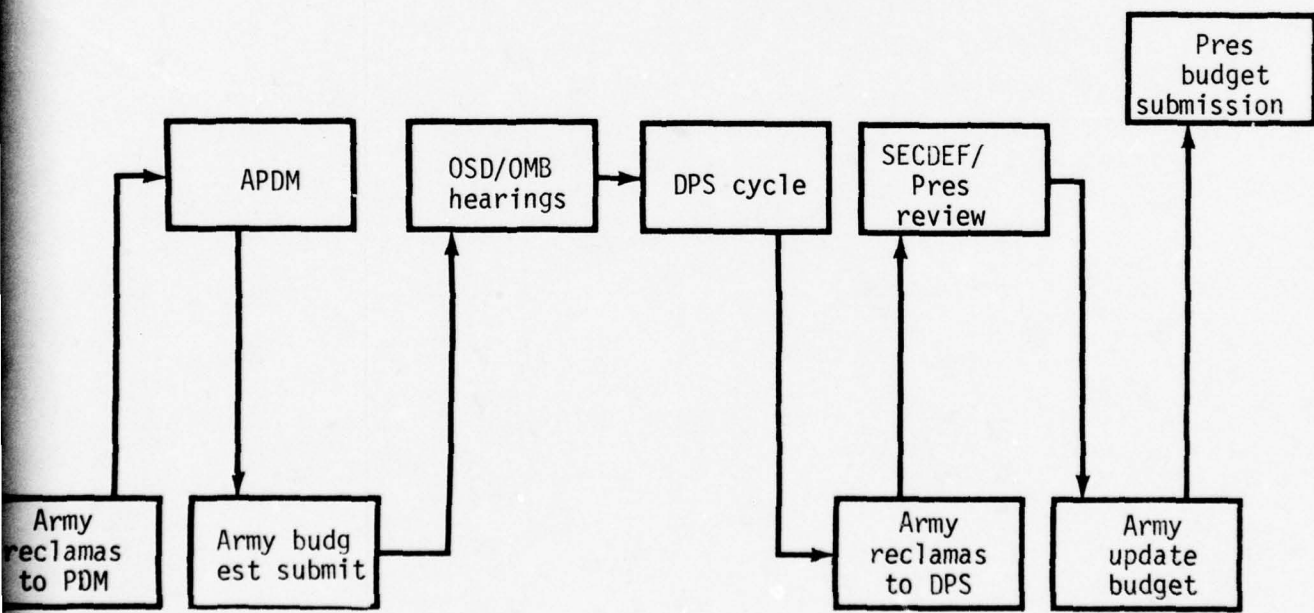
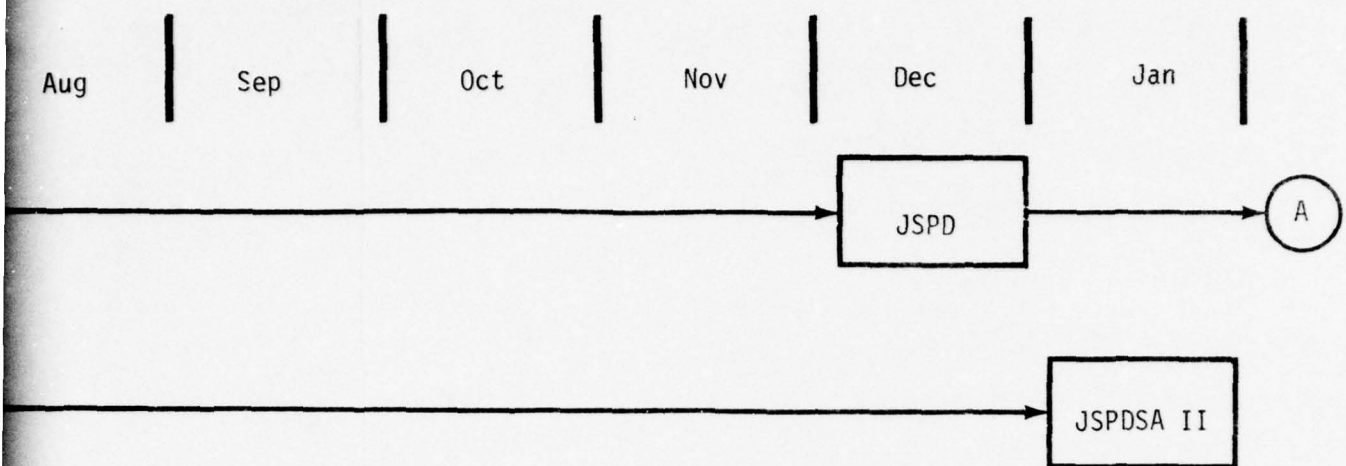


Figure 3-3. Army to Higher Authority Interchange, CY 78 Experience

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terchange, CY 78 Experience

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(2) In the Army-to-operational-headquarters dialogues, there is a multiplicity of guidance for a single response; preliminary guidance is used to prepare responses; subsequent revisions are made to responses after justifications have been prepared.

d. Comparison. The current application of PPBS in the Army does not achieve the desired use of planning or provide the time for analysis that President Johnson was convinced would "improve our ability to control our programs and our budgets rather than having them control us...." The next chapter presents details of the planning, the programing, and the budget formulation phases analyzed in CY 78 and projected for CY 79. That chapter provides insights on the PPBS environment and is a basis for the prescriptions and alternatives in the subsequent chapters.

CHAPTER 4

PLANNING, PROGRAMING, AND BUDGET FORMULATION:
ENVIRONMENT AND ACTIVITIES

4-1. INTRODUCTION. In this chapter, the MAKRO study analysis of each phase of PPBS is discussed. The analysis was begun in February 1978 and the first observation was that documentation of the activities within phases was minimal. In addition, calendar year (CY) 78 was a year of greater than usual change in each of the phases because of changing DOD PPBS guidance; particularly, the Consolidated Guidance (CG)* documents and Zero-Base Programing/Zero-Base Budgeting (ZBP/ZBB) methodology. The analysis of activities reported herein was limited to the ARSTAF division level of detail. Much of how and when activities in each phase would be accomplished was unknown until the activities were experienced. The number of distinct activities analyzed in each phase greatly exceeded the number estimated at the initiation of the study. The analysis resulted in the development of 21 descriptive network models presented in Appendix E. The subsequent discussions are limited to the planning, programing, and budget formulation activities (to include the submission of the President's budget to Congress); no analysis is presented on budget execution. Paragraphs 4-2 through 4-4 discuss the analysis of each phase sequentially. Paragraph 4-5 provides insights from the analysis that form the basis for the management prescriptions and more comprehensive alternatives in the subsequent chapters.

4-2. ARMY PLANNING. Army planning, within the context of AR 1-1, seeks to develop a force based on the US military strategy to attain established national security objectives. The force, strategy, and objectives are formally developed with the other Services in the Joint Strategic Planning System (JSPS). The JSPS comprises a number of documents addressing threat, strategy, and force structure. In particular, the Joint Strategic Planning Document (JSPD) "provides the advice of the JCS to the President, National Security Council, and the Secretary of Defense on the military strategy and force structure required to attain the

*The CG replaces the Defense Policy and Planning Guidance (DPPG), Tentative Planning and Programing Guidance Memorandum (TPPGM), and the Planning and Programing Guidance Memorandum (PPGM).

national security objectives of the United States."* The JSPD is prepared in time to influence the OSD internal staffing of the DOD CG. The CG provides policy and planning guidance for the mid-range years and program guidance for the program years. As such, the CG serves as the key guidance document in PPBS and the JSPD serves as the Joint Chiefs' planning advice for the CG. In addition to developing the Army portion of the JSPD, the Army unilaterally presents planning and programing proposals to DOD for consideration in the development of the CG. The ARSTAF, under direction of the DCSOPS, develops priorities and force guidance for program development. The subparagraphs below describe the planning phase of PPBS in terms of JSPD development with the other Services, Army unilateral input to the CG, and development of Army priorities and force guidance for programing. A description of the planning phase in terms of the interrelationships of activities and participants over time is presented in descriptive network diagrams at Appendix E, Annex I.

a. Army Participation in JSPD. The JSPD replaced the Joint Strategic Objective Plan (JSOP) both procedurally and substantively during CY 78. The JSPD is an annual, mid-range planning document designed to assist the Secretary of Defense (SECDEF) in the preparation of the CG. JSPD is derived from the JSPD Supporting Analysis (JSPDSA), an internal JCS document. JSPDSA is in two sequential parts: Part I, JSPDSA, Strategy and Force Planning Guidance, and Part II, JSPDSA, Analysis and Force Requirements. JSPDSA II is comprised of three books and several functional annexes. Army force analyses are input to JSPDSA II, Book II, General Purpose Forces; the subsequent discussion and the descriptive network diagrams are keyed to Book II actions. Army input to the JSPDSA documents and subsequent JSPD is scheduled to begin in January following publication of a draft CG and to end in November in time to influence the next CG. Sequentially, JSPDSA I is developed to provide military strategy, force planning guidance to the CINCs and Services and JCS views on the international environment. The guidance is used for the development of scenarios, forces, and functional annexes for use by the Services and the Joint Staff in the development of JSPDSA II. As JSPDSA II nears completion, JSPD staffing begins. JSPD is to be completed and released 60 days prior to the OSD draft CG. The first attempt at fitting the new documents into a schedule to conform with the CG occurred in CY 78 (see Figure 4-1). The first OSD CG was released in draft in January followed by a final in March 1978. The JSPS cycle was initiated in March 1978.

*JCS Memorandum of Policy No. 84 (MOP 84), 6 April 1978.

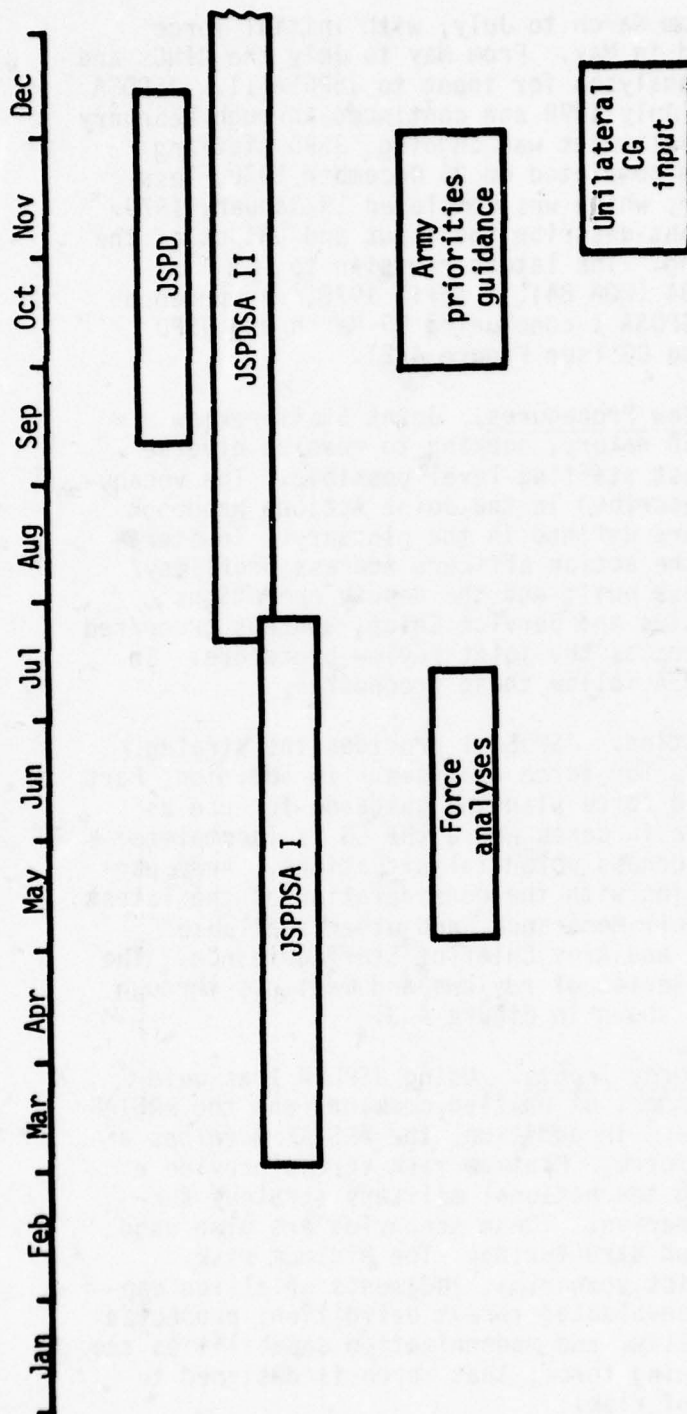


Figure 4-1. CY 78 Planning Experience

JSPDSA I was developed from March to July, with initial force planning guidance released in May. From May to July the CINCs and Services conducted force analyses for input to JSPDSA II. JSPDSA II staffing began in late July 1978 and continued through February 1979. While JSPDSA II development was ongoing, JSPD staffing began in September and was completed on 26 December 1978, less Annex F, Cost and Manpower, which was completed 19 January 1979. The subsequent subparagraphs describe the input and output of the major processes in planning. The latest revision to JCS Memorandum of Policy No. 84 (MOP 84), 6 April 1978, announced a schedule that envisions JSPDSA I concluding 15 March and JSPD concluding 60 days prior to CG (see Figure 4-2).

(1) Joint Staff Review Procedures. Joint Staff review procedures are iterative in nature, seeking to resolve diverse Service issues at the lowest staffing level possible. The vocabulary and procedures are described in the Joint Actions Handbook published by ODCSOPS and are defined in the glossary. In iterative, sequential reviews the action officers address preflimsy/flimsy; the planners address buff; and the deputy operations deputies, operations deputies and Service Chiefs address green/red stripe. Figure 4-3 illustrates the joint review procedure. In general, the JSPD and JSPDSA follow these procedures.

(2) JSPDSA I Preparation. JSPDSA I provides the strategy and force planning guidance for force analyses. In addition, Part I includes JCS strategy and force planning guidance for use as excursions from CG guidance in cases where the CG is incomplete, restrictive, or fails to address potential situations. Army participation in JSPDSA I begins with the consideration of the latest CG, National Security Council Memoranda, and other available Presidential, SECDEF, JCS, and Army Chief of Staff guidance. The Services participate in a series of reviews and meetings through the joint review procedure shown in Figure 4-3.

(3) Development of Force Inputs. Using JSPDSA I as guidance, Army component commanders of unified commands and the ARSTAF develop minimum risk forces. In addition, the ARSTAF develops a recommended Army planning force. Minimum risk forces provide a high assurance of executing the national military strategy successfully in specified scenarios. These scenarios are also used for program force sizing and structuring. The minimum risk forces, simultaneous conflict scenarios, judgments of allied capabilities and resolve, a reevaluated threat definition, projected force mobility and flexibility, and modernization capabilities are used to formulate the planning force; that force is designed to accept an increased level of risk.

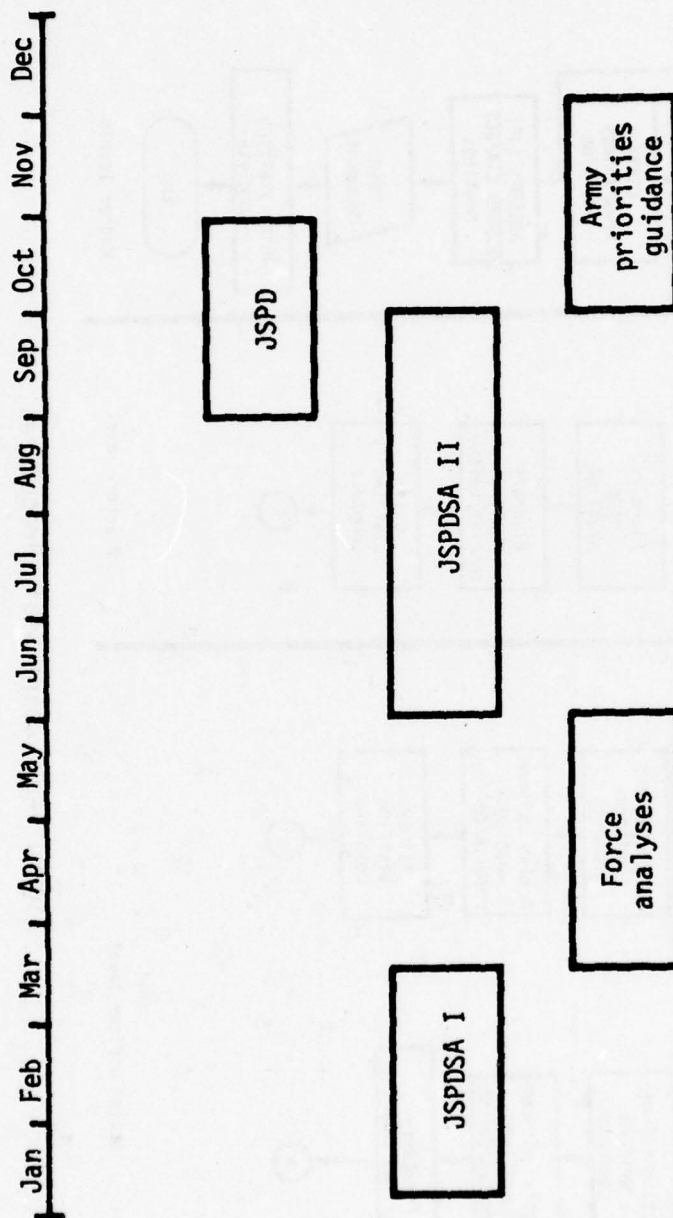


Figure 4-2. CY 79 Planning Projection

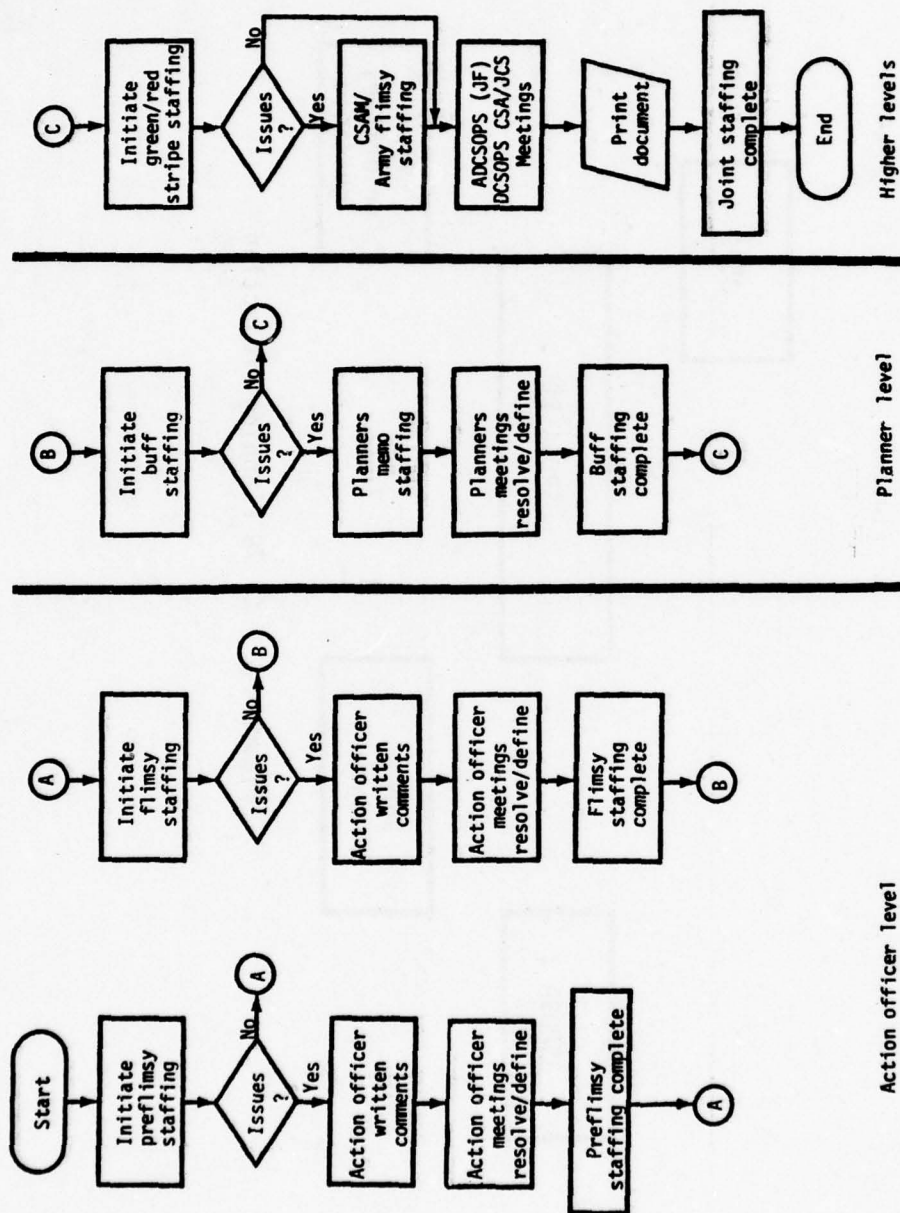


Figure 4-3. Joint Staff Procedures

The planning force is developed, rounded with support forces, and analyzed to ascertain that it can execute successfully the national military strategy "with reasonable assurance."* The minimum risk force requirements and planning forces, and cost and movement analyses for the planning force are developed in the preparation for JSPDSA II.

(4) JSPDSA II Preparation. JSPDSA II is prepared using the CG, JSPDSA I, and force levels developed by the CINCs and Services. Through the iterative joint review procedures from pre-flimsy through green, the individual Service planning force inputs are modified to reach mutual JCS agreement. The major output of JSPDSA II is an approved planning force and support levels for strategic and general purpose forces, and projected and recommended allied and friendly forces. Additionally, the output includes: (a) an examination of the planning force in light of "fiscal responsibility,"* manpower resources, materiel availability, technology, and industrial capacity; (b) an assessment of the program force capabilities and risk developed in the last cycle; and (c) the JCS advice on desired allied/friendly force levels for the mid-range years including a recommended priority for military security assistance.

(5) JSPD Preparation. The JSPD staffing begins while the JSPDSA II development continues. Completion of the JSPD is timed to influence OSD's preparation of the next CG. It represents the JCS advice to the President and SECDEF and it serves as JCS feedback on the planning and programing guidance of the previous CG. JSPD contains a review of basic US security and an assessment of the international environment, appraisal of the threat, a statement of recommended military objectives derived from the national objectives and a recommended military strategy for the mid-range period. It also includes a summary of planning force levels and recommends guidance on issues resulting from an assessment of the capability and risks of the prior year program force. Recognizing that the planning force may not be achievable in the mid-range due to proposed resource constraints, the JCS have recommended risk reduction measures which can be attained within a five percent real growth envelope. These measures are intended as an initial step towards attaining the planning force levels. The JSPD is drafted by the JCS and reviewed by the Services through as many iterations as required to attain a JCS position.

*JCS Memo, op. cit.

b. Preparation of Other JSPS Documents. The Army also develops a position in a number of other JSPS documents which are considered in the preparation of the JSPD. But since the major planning contribution to PPBS is made in the documents described in the preceding subparagraph, the Army input to the following JSPS documents was not analyzed in this study:

(1) Joint Long-Range Strategic Analysis (JLRSA) (to be introduced in October 1980). The JLRSA replaces the Joint Long-Range Estimative Intelligence Document (JLREID) and the Joint Long-Range Strategic Study (JLRSS).

(2) Joint Intelligence Estimate for Planning (JIEP). The JIEP provides the principal intelligence basis for the JSPD, JPAM, and JSCP.

(3) Intelligence Priorities for Strategic Planning (IPSP). The IPSP advises the SECDEF on intelligence priorities to carry out the military strategy described in the JSPD. It also provides guidance and advice to the Service chiefs, commanders of unified and specified commands, and heads of other defense activities having intelligence responsibilities in the short- and mid-range periods.

(4) Joint Program Assessment Memorandum (JPAM). The JPAM, issued after the Service programs, gives the views of the Joint Chiefs on the adequacy of the composite force and resource levels presented in the Service programs (Program Objective Memorandum (POM)).

(5) Joint Strategic Capabilities Plan (JSCP). The JSCP assigns the commanders of unified and specified commands the responsibility for preparing contingency plans based upon projected military capabilities, estimates of the threat during the short range period, and current guidance of the SECDEF.

c. Army Unilateral Input to OSD. The JSPS documents presented in subparagraphs a and b above specifically satisfy the Army's requirement for participation in the planning phase of PPBS as defined in AR 1-1. In addition, the Army provides unilateral planning input to the DOD PPBS. The CY 78 experience is described. The OSD requested Army proposals to be addressed in the CG. In effect, the Army was asked to advise OSD on developing the next CG and on providing feedback to the last CG. Also, OSD requested comments on the draft of the Defense Policy Guidance (DPG) which was included in the CG. The unilateral responses to OSD complemented the Army's participation in the JSPS by presenting Army proposals developed jointly in the JSPD as well as those filtered

out by JSPD procedures and reviews. Also, Army proposals not provided to JCS were presented. Unilateral responses to the development of the CG and draft DPG were requested in November, staffed within the Army in two to three weeks, and returned to OSD in December. Based on CY 78 experience, the Army responds to OSD on the draft CG both through the JCS and unilaterally. The CG contains OSD planning and also programing guidance. By input to the JSPD and by unilateral input to the CG, Army planning influences program guidance from OSD.

d. Army Priorities Guidance from Planning. There are three sets of prioritization guidance from planning for programing and budgeting.

(1) CSA Priorities. The guidance in the CG in January and March is used in developing priorities for programing in the following November. Those priorities are available for use early in the programing phase. The ODCSOPS prepares these broad Army priorities for approval by the CSA.

(2) Force Packages. This is guidance which relates the various portions of the Army force structure to strategic and contingency planning. Essentially, the guidance identifies units which should be maintained at highest levels of combat readiness. The attainment of a high level of readiness requires resource expenditures to man, equip, and train the unit properly. In this guidance, the importance of missions that are assigned to various units is an important factor for consideration when making decisions involving the allocation of scarce resources.

(3) Army Priorities for Program Development. ODCSOPS prepares and coordinates the Army Priorities for Program Development from the CSA priorities and force packages. The document provides guidance for the development and subsequent prioritization of funding issues in the programing and budgeting phases. The document is produced in the fall, and released to the ARSTAF and field in November to coincide with the Preliminary Army Planning and Programing Guidance Memorandum (PAPPGM).

e. Program Force Guidance. The planning force exceeds expected resource limitations. The ARSTAF, under the direction of the ODCSOPS, determines a combat force that might reasonably be expected to be funded in the next Army program. This force and pertinent assumptions become the guidance for program force development. This activity is completed prior to June when the program force development process begins.

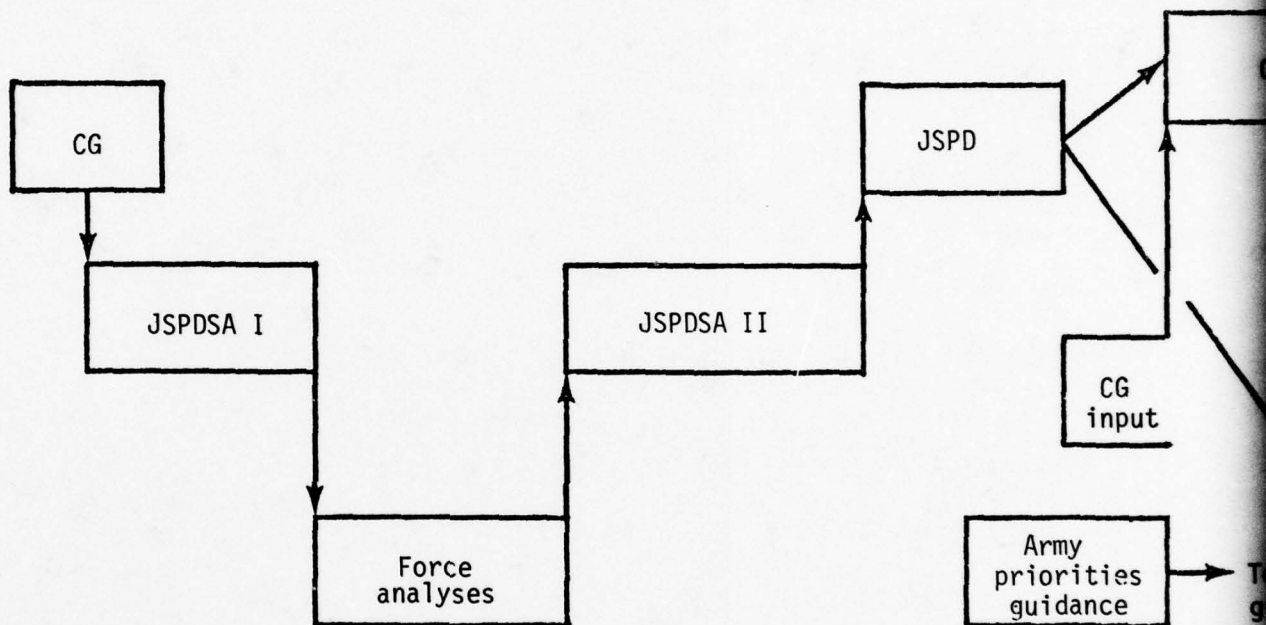
f. Summary. The CY 79 planning processes described above flow in a sequential relationship as shown in Figure 4-4. The figure illustrates three sequential planning phase cycles. The priorities guidance and program force guidance are outputs of Army planning phase that are provided for input to the programing phase. Insights on Army planning are discussed in paragraph 4-5 below.

4-3. ARMY PROGRAMING. Programing is the second phase of the PPBS. As the second of three sequential phases, programing is designed to be a transformation process that links planning and budgeting in the fashion depicted in Figure 4-5.

a. Army Programing in Perspective. Programing receives input from Army planning and OSD, assimilates that input and other ARSTAF and MACOM input and feedback, and transforms all of that diverse and often conflicting input into the Army program. As stated previously, the program is presented to OSD in the Program Objective Memorandum (POM) each May. The POM describes the activities which the Army expects to accomplish in a specified five-year period. The Army program is the basis for the subsequent Army Budget Estimate (ABE) submitted to OSD. The budget submission addresses the same five years as the POM; the first program year is referred to as the budget year (BY). After the budget is submitted to OSD in September, about a year is spent in justifying and defending the Army position during OSD, OMB, and Congressional reviews; subsequently, funds are made available for budget execution. Figure 4-6 places into chronological perspective the fiscal year (FY) being programed, budgeted, and executed in a particular 2 1/2 year period.

b. Army Programing Overview. In considering Figure 4-6, it should be noted that four of the five years to be described in any POM are the same as those covered in the previous POM. During each succeeding cycle, the first program year will become the budget year (BY), and a new year will be added to become the last "out year". One might presume from this that the challenge facing the programmer each year is to take the four years of the program which remain from the previous POM (these four years are detailed in the Five Year Defense Plan) and develop an additional program year. In fact, the task is decidedly more complex. In the twelve months between successive POM submissions, many things change and the entire program, as previously approved, must be reconsidered in light of these changes.

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec



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Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

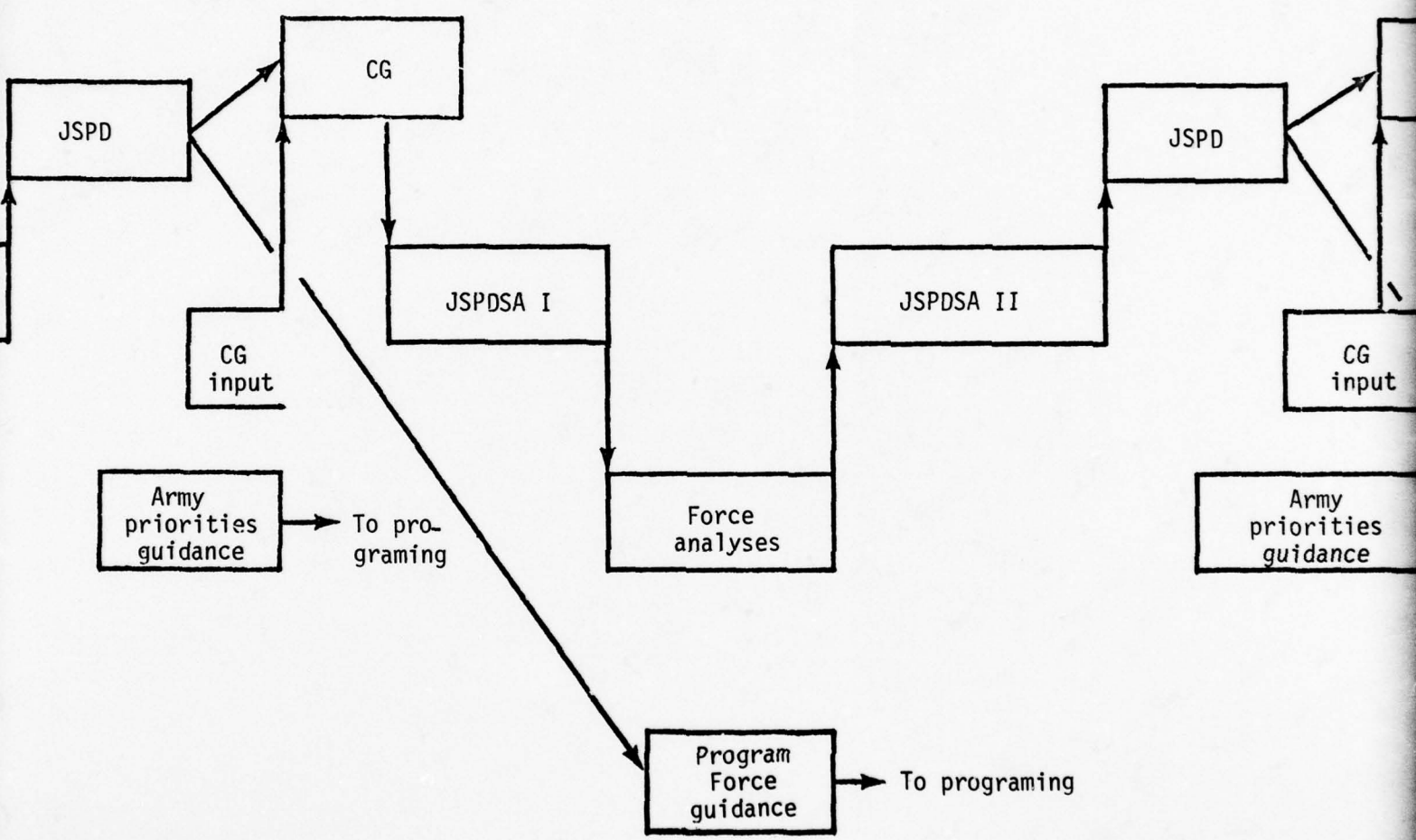
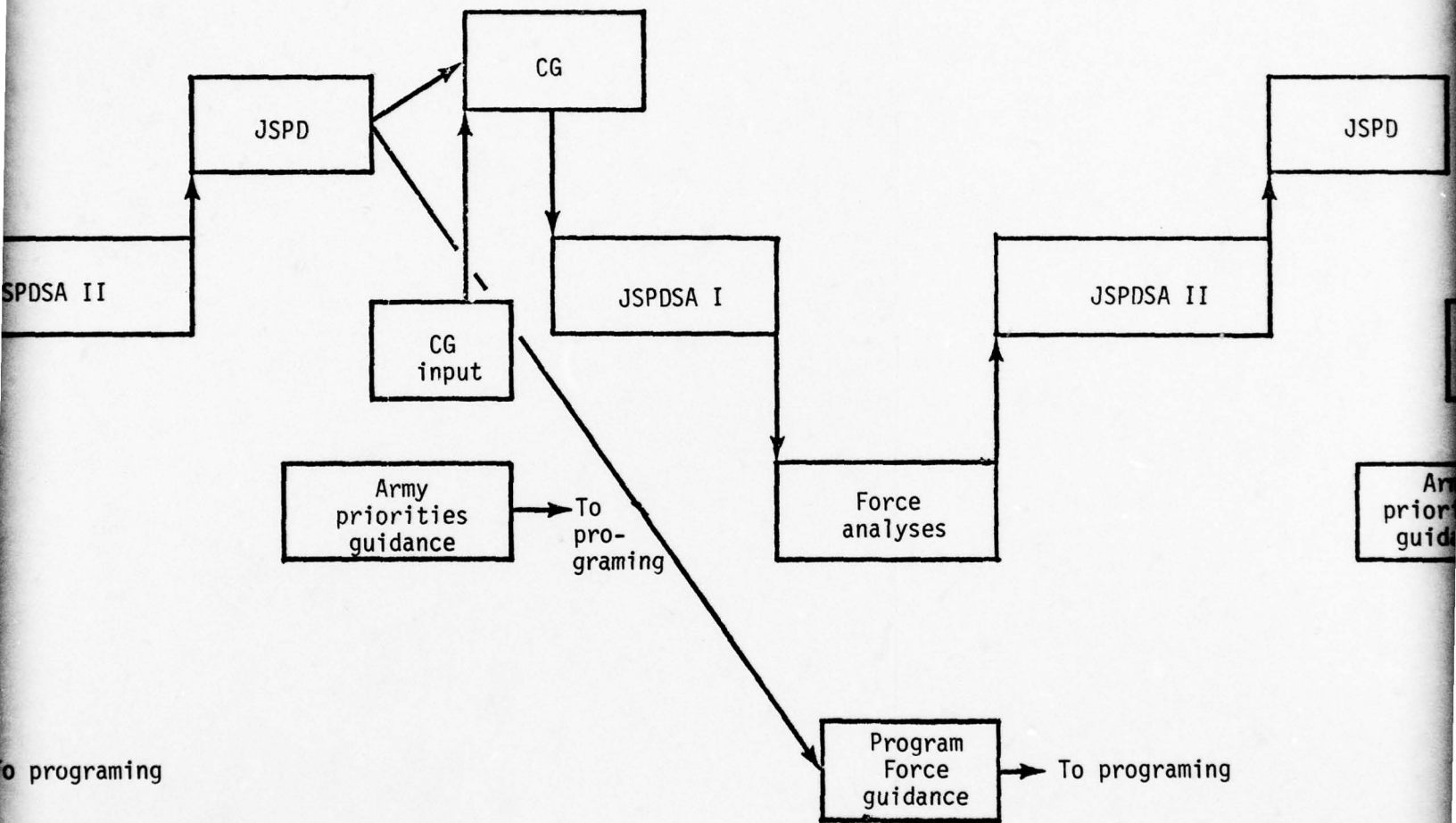


Figure 4-4. Planning Processes Flow, C

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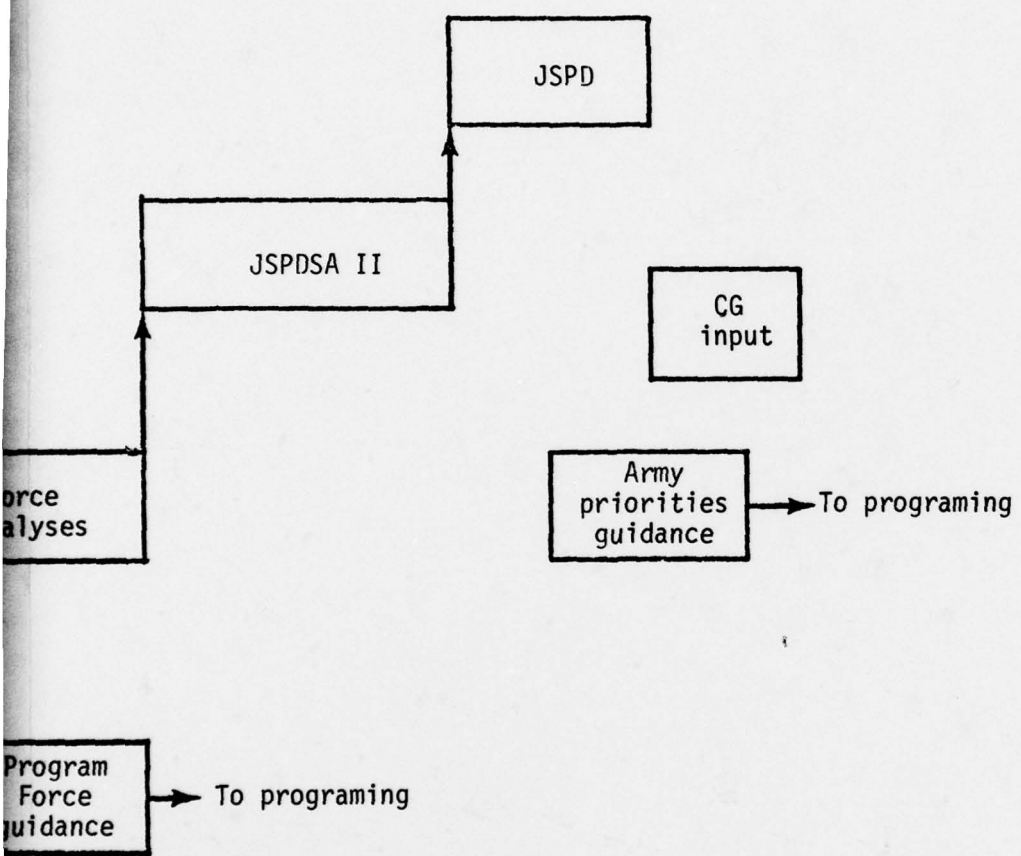
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Planning Processes Flow, CY 79

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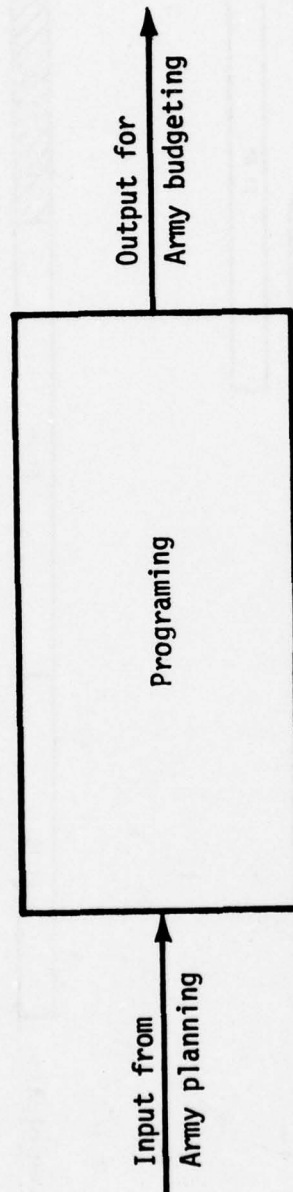
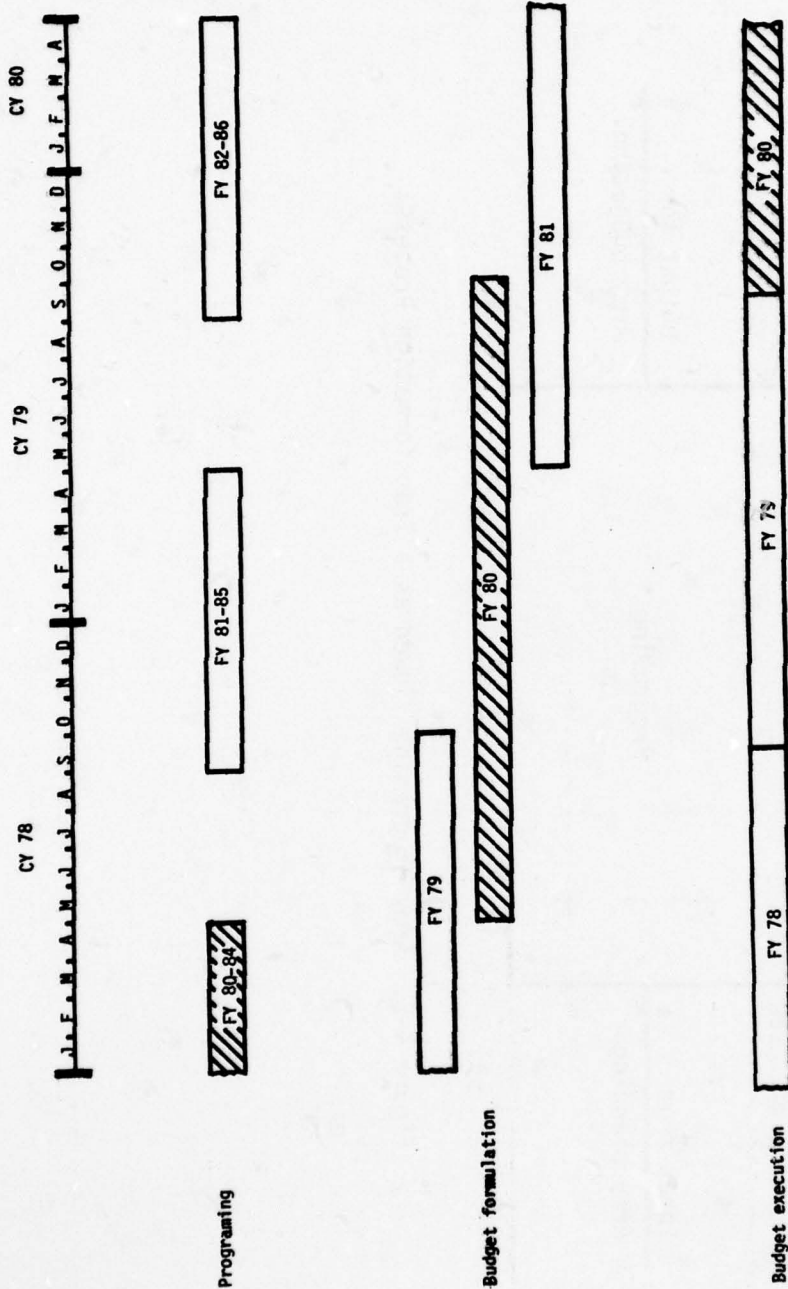


Figure 4-5. Army Programming Viewed as a Transformation Process



Note: Crosshatching indicates Programming/Budgeting phases for FY 80

Figure 4-6. Chronological Perspective of Programming and Budgeting

When the Army was required to submit its program in "zero base" fashion in 1978, a new methodology for program development was instituted. The methodology is depicted in Figure 4-7. The central theme of the methodology involves the identification of the least important functional issues in the FYDP. These issues and associated resources are removed from the FYDP and those which remain become the Core Program. Issues which are removed to achieve this decremented funding level will compete for resources with new issues generated by the ARSTAF and the MACOM as the program is developed. Cost estimates are prepared by the ARSTAF for all issues prior to the Functional Review by the Army leadership. This review process involves an assessment of the costs and benefits associated with each competing issue and a determination of the relative importance of the various issues. The total costs associated with the issues far exceed the resources which the Army expects to receive. Only those issues considered most important will remain after this Functional Review by the leadership. These issues will be developed in much greater detail prior to the Appropriation Review which is held in April. Detailed cost estimates will be made for each issue, and the ARSTAF will attempt to create a balanced program around them. The issues will be displayed to OSD in the POM as functional issues requiring funds and in appropriation distributions. Issues will be displayed in order of priority, from the minimum (most likely to be funded) to the enhanced (least likely to be funded) level of funding.

c. Input from Army Planning. Army planning provides input to programing; certain primary input has been identified as being provided directly and some indirectly. Figure 4-8 illustrates the input flows. The indirect input is provided through the OSD CG as discussed in paragraph 4-2a and c above. The two direct means by which Army planning influences the programing phase are discussed below.

(1) Program Force Guidance. Program force guidance is derived from the Army planning force approved in the JSPD. The planning force is too large for programing, therefore, the force is attenuated by ODCSOPS. The attenuated planning force forms a basis for development of the program force--the Army program force will be further decremented during POM development (see Appendix D for a discussion of the force development process).

(2) Army Priorities Guidance. Army planning prepares priorities for program development which assist and guide programing; the guidance is provided in two forms:

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov

CG

JSPD

JSPDSA I

JSPDSA II

CG
input

Force
analyses

Army
priorities
guidance

Program
Force
guidance

Program Force
development process

—→ Direct
- - -→ Indirect

2

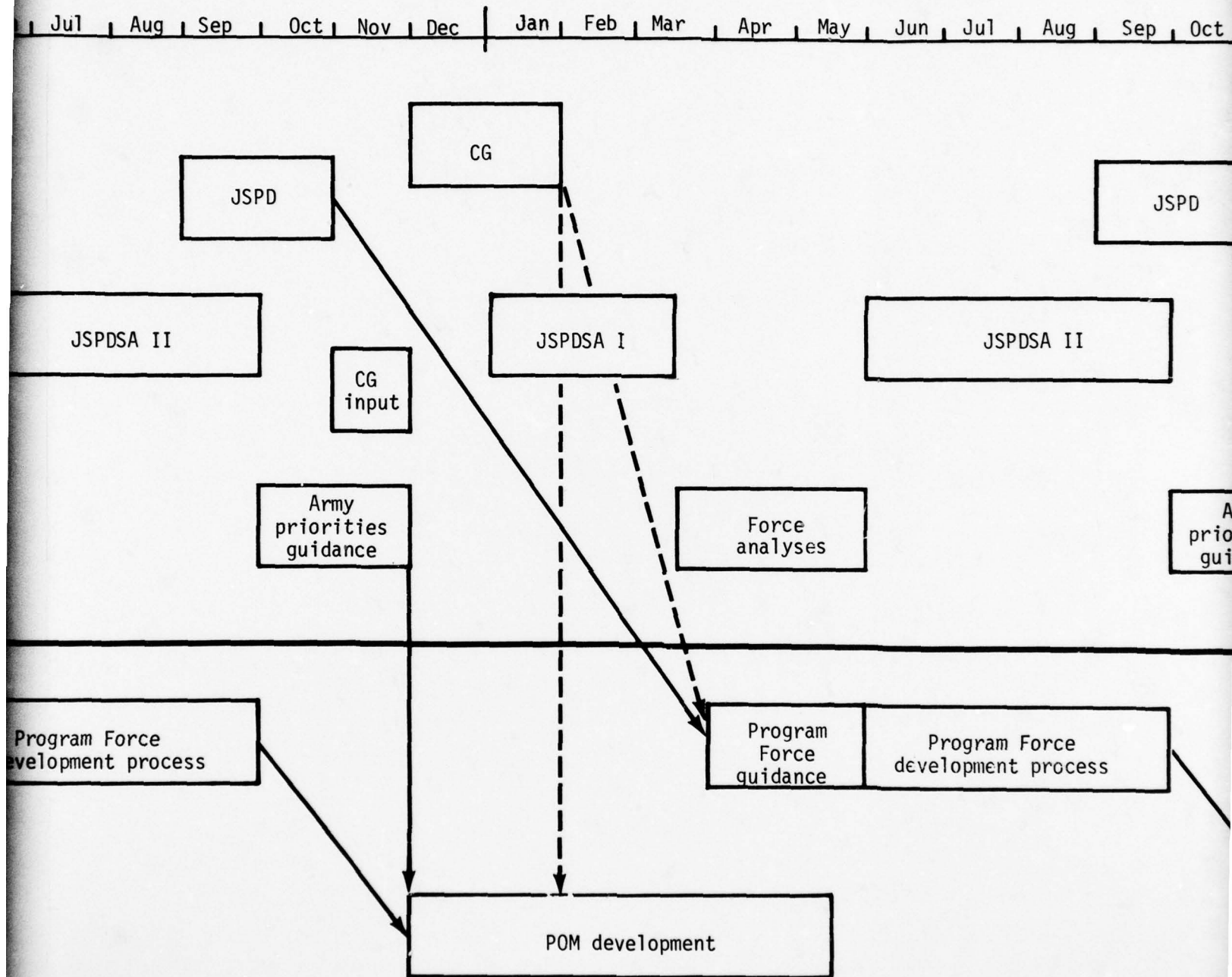
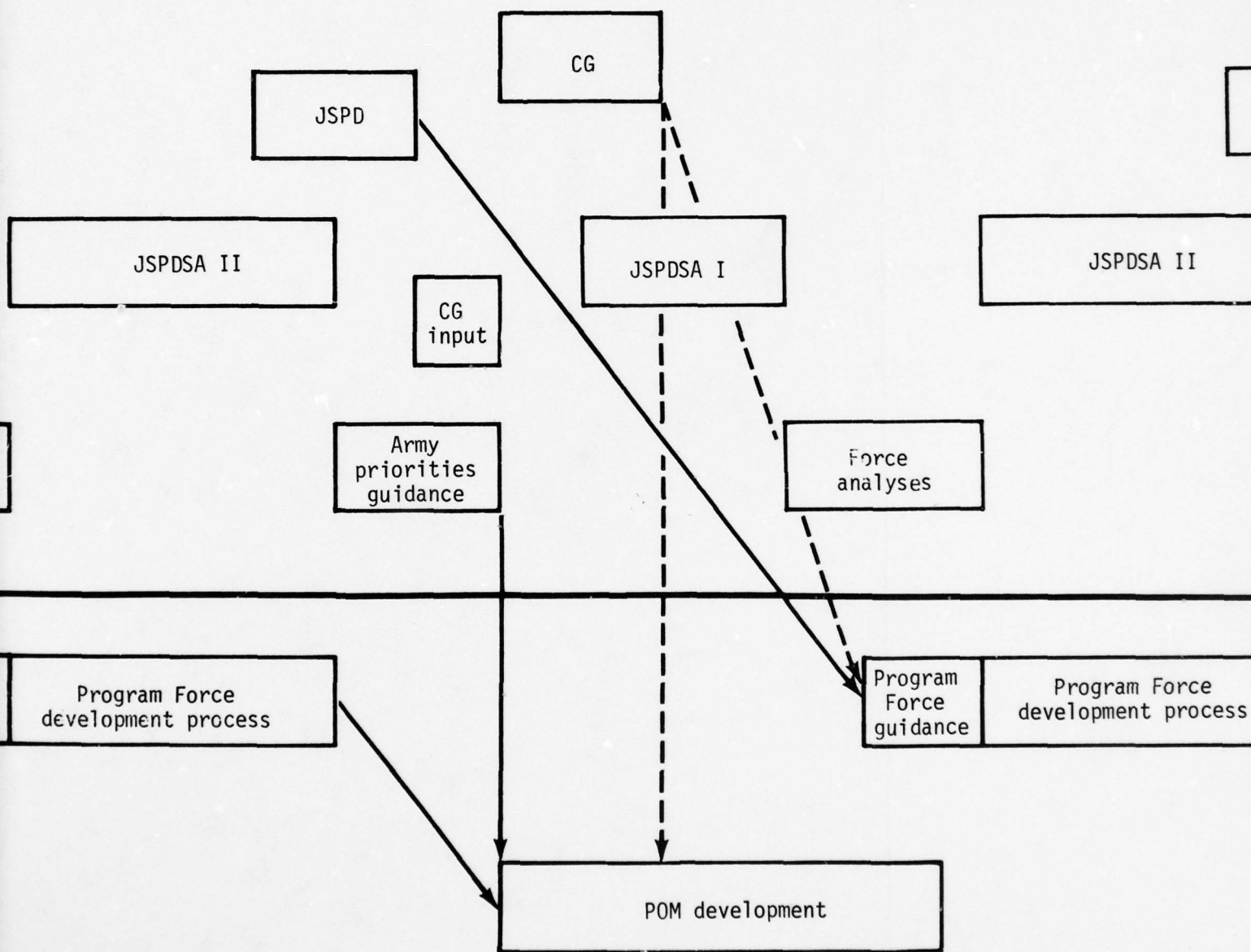


Figure 4-8. Planning to Programing Linka

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g to Programing Linkage

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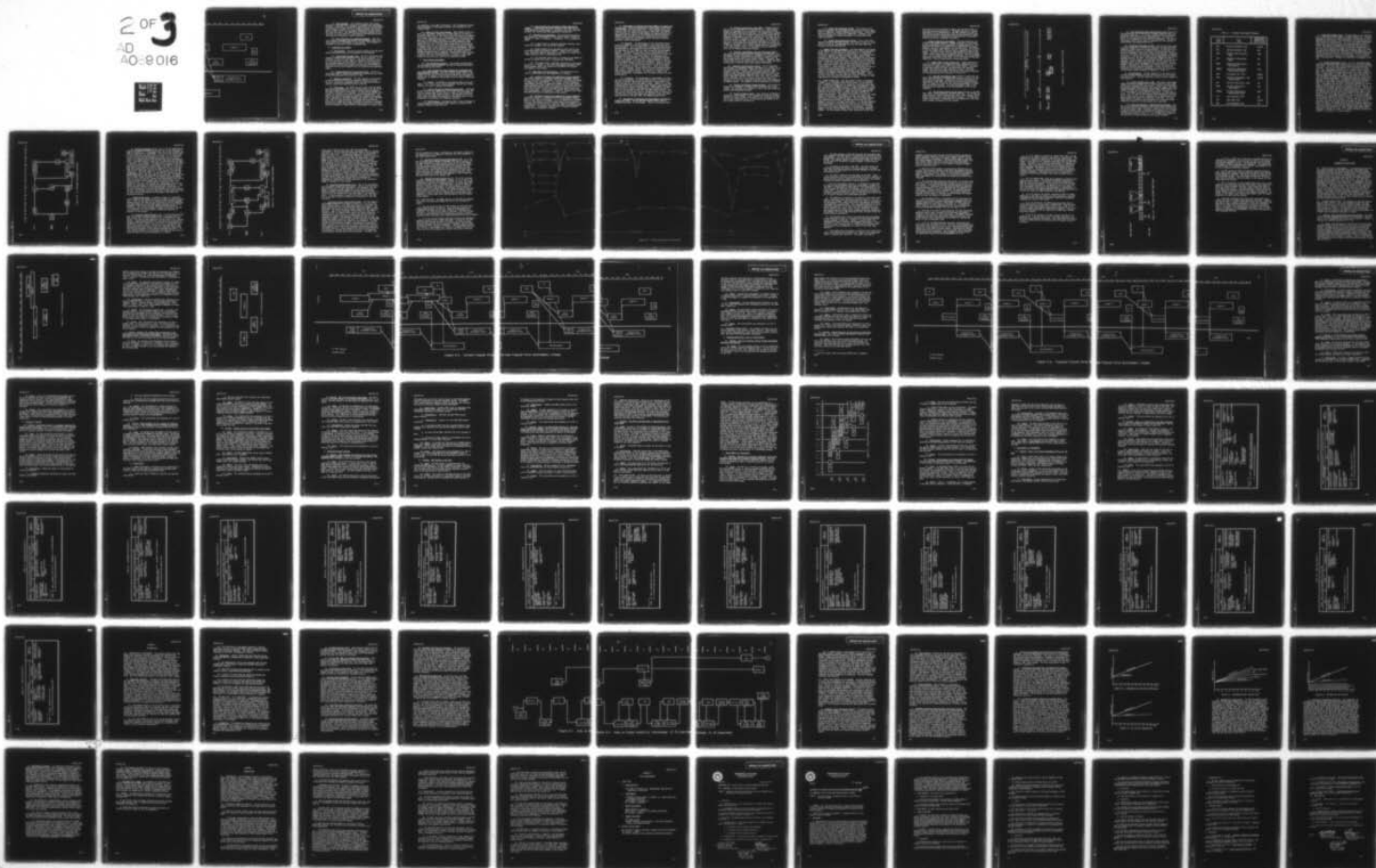
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MANAGEMENT ANALYSIS OF KEY RESOURCE OPERATIONS (MAKRO). VOLUME --ETC(U)
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A resolution test chart featuring 18 groups of five horizontal and five vertical lines. Each group is labeled with a number representing its resolution. The numbers are arranged in a 3x6 grid. The first column contains 1.0, 1.1, and 1.25. The second column contains 1.4, 1.6, and 1.8. The third column contains 2.0, 2.2, and 2.5. The fourth column contains 2.8, 3.2, and 3.6. The fifth column contains 4.0, 4.5, and 5.0. The sixth column contains 5.6, 6.3, and 7.1. The lines become progressively smaller and closer together as the resolution number increases.

4

Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |

JSPD

JSPDSA II

CG
input

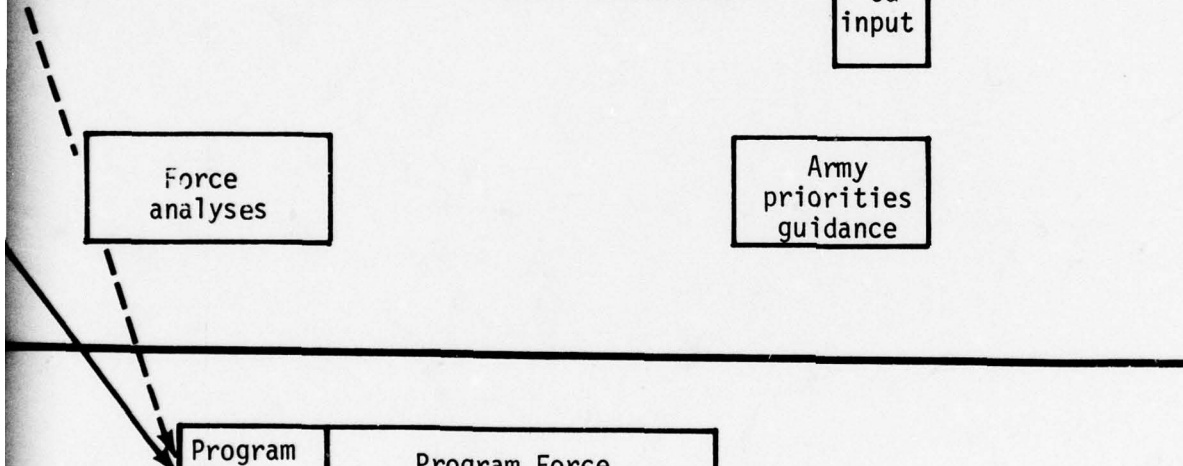
Force
analyses

Army
priorities
guidance

Program
Force
guidance

Program Force
development process

velopment



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(a) Force Packages. This guidance relates the various portions of the Army force structure to strategic and contingency planning. Essentially, the guidance identifies units which should be maintained at highest levels of combat readiness and should be given a higher priority for resource expenditures to man, equip, and train the units. The importance of missions assigned to various units is a key factor for consideration when making decisions involving the allocation of scarce resources.

(b) Army Priorities for Program Development. Army planning produces a document that details the functional areas to receive priority for development in the program. This guidance is forwarded at the start of each programming cycle.

d. Programing Environment

(1) OSD Guidance. The Army receives guidance from OSD which affects the form as well as the substance of the program.

(a) Consolidated Guidance (CG). The CG is the primary OSD guidance concerning the substance of the Service programs. It is available in draft in late January. The final version of the CG is to be published in March after the SECDEF has consulted with the President regarding the content. The CG is thus designed to provide the Services with guidance that has been coordinated between DOD and the Chief Executive for the planning and programing phases.

(b) Program Preparation Instructions (PPI). The PPI is published by OSD in January as guidance for structuring the format of the POM submitted by the Services in May.

(2) Resource Constraints. The Army program is constrained by the availability of funds and manpower, both military and civilian. During the programing cycle, the Army must conform to resource constraints specified by OSD in the CG.

(3) Field Input. The ARSTAF receives input from the MACOM during the programing phase; in CY 79 that input is by way of the PARR and Program Analysis and Budget Estimate (PABE) documents. The PARR is received in mid-January. It provides the MACOMs with a means of surfacing new issues for funding consideration. The PARR is the vehicle by which the MACOM can influence the program. Issues submitted by the MACOM compete with ARSTAF issues for funding. Once the Army leadership has decided upon the relative merits of all competing issues, the MACOM are notified of program issues which affect their command and merit inclusion in the POM. Detailed estimates of MACOM resource requirements for these issues

are submitted in the PABE in mid-March. This information assists staff programmers in developing accurate cost estimates for all program issues.

(4) Impact of Prior Year Programs. Most funding issues are multi-year in nature; rarely will a requirement of the type addressed at HQDA level be satisfied by the application of resources in a single fiscal year. As a consequence, an issue being developed in the programming phase may be influenced by concurrent PPBS decisions in the budget formulation or budget execution phases (see Figure 2-1) if those decisions affect related prior year aspects of the issue. During budget formulation, decisions made on budget issues in the review and approval processes may impact on related issues being considered in program development. During budget execution, the correlation between the results achieved through the application of resources and the expectations will similarly impact on Army programming. Programming is thus required to monitor and react to PPBS decisions in order to assess the effects of any prior year decision on programming issues.

e. Army Program Development

(1) Army Programming Guidance. From October through April, the following guidance documents relating to program development are published by the ARSTAF:

(a) Draft Preliminary Army Planning and Programming Guidance Memorandum (PAPPGM). The draft PAPPGM is published by the Program Analysis and Evaluation Directorate (PAED), OCSA, in mid-October for the purpose of providing the ARSTAF and the MACOM an opportunity to comment on the guidance prior to formal PAPPGM publication.

(b) PAPPGM. The PAPPGM is published by PAED in late November. This is the formal tasking document that defines responsibility for areas of program development.

(c) January Program and Budget Guidance (PBG). Published by the Office of the Comptroller of the Army (OCA) to advise the field of changes made to the FYDP as a result of OSD and OMB review of the last Army budget estimate. The changes to the FYDP which affect the MACOM are displayed in the PBG to assist in the preparation of programming and budgeting documents.

(d) PAPPGM Update. Published by PAED in early February to reflect changes to the PAPPGM brought about as a result of OSD guidance received in the draft CG.

(e) Army Planning and Programing Guidance Memorandum (APPGM). Published by PAED after receipt of the final CG; the APPGM amends the PAPPGM update in accordance with the latest OSD guidance and incorporates POM preparation instructions.

(2) Program Force Development. The program force development process is illustrated in a descriptive network diagram at Appendix E, Annex II, Network F. In general, it is a process by which:

(a) A combat force is obtained from Army planning, Directorate of Strategy, Plans and Policy, ODCSOPS.

(b) Combat support units are added to the force by the Force Development Directorate, ODCSOPS. Combat service support units, which are required doctrinally, are added as a result of a combat simulation that is conducted by CAA.

(c) The resultant total force is reviewed by the ARSTAF to provide a program force which is balanced and attainable.

(d) The program force, sometimes referred to as the master (M) force, is "frozen" in the Force Development Management Information System (FDMIS) and released to the ARSTAF for program development in mid-October.

(3) Application of Program Force. The program force provides a direct input into two computational processes:

(a) Logistics Structure and Composition System (LOGSACS). The LOGSACS process is a method by which the equipment requirements of the force are generated. Currently, six weeks are needed to compute these requirements. The process involves computing requirements according to approved documents in The Army Authorization Document System (TAADS) and Table of Organization and Equipment (TOE) and then revising the computations based on Basis of Issue Plans (BOIP) or staff projected changes which affect material requirements. See Appendix E, Annex II, Network G for a more detailed descriptive illustration of the process.

(b) Personnel Structure and Composition System (PERSACS). The PERSACS process is a method by which the personnel requirements of the force are generated. It is a computational procedure which is very similar to LOGSACS except that it only calculates personnel requirements based on approved TAADS/TOE documents. As a consequence, it requires only about two weeks to perform PERSACS computations. The manpower implications of proposed equipment changes are not projected in PERSACS.

(4) Development of Appropriation Requirements to Support the Program Force. Some Army appropriation requirements are particularly dependent on the program force. These appropriations (Procurement, MPA, RPA, NGPA, and portions of OMA, OMAR, and OMARNG) have procedures to identify requirements and these procedures are dependent upon the results of the LOGSACS and PERSACS processes. LOGSACS results provide a basis for determination of materiel acquisition objectives and PERSACS results are used to develop personnel related requirements.

(a) Materiel. The development of the procurement appropriation program is a very key element in the entire process of POM development. This is because the procedure employed involves determination of the Authorized Acquisition Objective (AAO) and the Army Materiel Plan (AMP) in order to develop the procurement program. The procedure currently requires approximately four months to complete. LOGSACS results are required to initiate the computational process, and these results are scheduled to be available in early December. Therefore, if everything proceeds according to schedule, the decision review conducted by the Research, Development, and Acquisition Committee (RDAC) to approve the procurement program is held in late March. Results are available just prior to the Appropriation Review of the Army program which is scheduled to begin in early April. There is no slack time in this sequence. Delays affect the entire program development process. LOGSACS results are also used in developing the Depot Overhaul/Rebuild Program. The OMA P-7(S), Supply, and P-7(M), Maintenance, requirements are influenced directly by this determination.

(b) Personnel. The development of requirements for military pay and allowances in the MPA appropriation is based on data derived in PERSACS computations and on force sizing results obtained through the use of the COMPLIP Model. COMPLIP is a linear programming model which calculates total manpower requirements for a given Force Structure Allowance (FSA). Requirements are developed for Active, Reserve, and National Guard forces and form a basis for development of MPA, RPA, and NGPA appropriations. PERSACS results also provide input to procedures used to forecast recruiting and training loads which will provide a basis for developing portions of the OMA, OMAR, and OMARNG appropriations.

(5) Development of Appropriation Requirements Involving Extended Lead Times. The MCA and RDTE appropriations require extended lead times for development. These are discussed below.

(a) Military Construction, Army (MCA). Congress desires that at least 35 percent of the design work for a construction project be completed prior to submission of the project for MCA funding during budget review hearings. The budget review hearings begin in January, and the rationale behind the 35 percent design completion requirement is so that a project will be ready for construction in the FY beginning the next October. The lead time required to develop a project in sufficient detail to initiate design work is such that MCA requirements generated as a result of changes in the program force should only be found in the out-years of the Army program. Thus, the MCA program may have a tendency to "lag" other appropriations if requirements are not identified early in the resource allocation process.

(b) Research, Development, Test and Evaluation (RDTE). The lead times associated with RDTE projects are extensive. The development of RDTE requirements is dependent to a large extent on the Defense Systems Acquisition Review Council (DSARC) and the Army Systems Acquisition Review Council (ASARC). Normally, these review councils are not considered to be a part of PPBS, but their actions have a definite impact upon program development.

(6) Leadership Participation Process. The DA leadership participates in programing through involvement in a variety of review and decision briefings. There are five different levels of leadership reviews: Rump Program and Budget Committee (PBC)--formerly, Rump Program Guidance and Review Committee (PGRC), now merged with Budget Review Committee (BRC); PBC (formerly, PGRC); Select Committee (SELCOM); Chief of Staff, Army (CSA); and Secretary of the Army (SA). All or most of these five levels are briefed on at least four separate occasions during the program development process. The purposes of the briefings are as follows:

(a) Approve Preliminary Program Guidance. This series of briefings is conducted in October prior to publication of the PAPPGM. The briefings are intended to insure that the leadership concurs with programing guidance.

(b) Discuss CG Major Issues. This series of briefings is conducted in late January. It is intended to formalize the Army position on issues raised in the draft CG and to provide the CSA and SA with information prior to the meeting with SECDEF to discuss issues raised in the draft CG.

(c) Conduct the Functional Review. This review is conducted in February for the purpose of deciding the relative importance of competing, resource-demanding alternatives. Issues which have no potential for funding are identified. Guidance is provided for subsequent program development of issues which have funding potential.

(d) Conduct the Appropriation Review. This is the final decision review of the Army program. It is held in April to allow sufficient time for implementing decisions and then compiling, editing, and publishing the POM.

f. Output from Army Programing. The Army Program is displayed in the POM and in the FYDP at the completion of the program development cycle. The POM describes the program as a prioritized listing of functional issues at minimum, basic, and enhanced funding levels, whereas the FYDP provides a single (basic) level breakout by FYDP program element. Both portrayals of the program are forwarded for OSD consideration. OSD review of the Army program is conducted during the Issue Cycle which occurs in June and July. During this time, OSD analysts question the content of the Army program and ARSTAF analysts reply and defend the same in "Issue Papers." These hearings lead to the publishing of the Program Decision Memorandum (PDM) by the SECDEF. The Army has a chance to reclama any decisions announced in the PDM; subsequently, the Amended Program Decision Memorandum (APDM) is published by the SECDEF in late August or early September. This is the final decision concerning the Army program. Insights on Army programing are discussed in paragraph 4-5 below.

4-4. BUDGET FORMULATION. The third phase of PPBS is budgeting. A budget is an instrument that reflects details of an organization's proposed programs and the resources to execute the proposals. In the Army, budgeting is divided into two subphases: budget formulation and budget execution. Budget formulation includes the activities accomplished to establish and secure the proposed programs and resource levels. Budget execution encompasses the activities that occur after resources are made available to execute the programs. The dynamics of PPBS in CY 78 and the large number of activities in each phase precluded the MAKRO study analysis of the entire budgeting phase. Only the budget formulation subphase was analyzed. The Army performs three distinct stages of activities in budget formulation: (1) the Army develops detailed estimates of the resources required, (2) defends those requirements within the DOD and Executive Branch of government, and (3) justifies those requirements to the Congress. The Army budget is an evolving instrument that is really three sequential budgets: the Army Budget Estimate (ABE) submission to OSD, the

Army portion of the President's budget, and the Army portion of the Congressional appropriation. The MAKRO analysis is limited essentially to the preparation of the ABE submission to OSD and the Executive Branch review that leads to the President's budget. Army participation in Congressional justification is described briefly but was not subjected to analysis.

a. Budget Formulation Environment. The Army formulates and justifies the budget annually. Budget formulation is the sequel to Army programming and the predecessor to budget execution. The MACOM and the ARSTAF are responsible for identifying the budget programs, resource requirements, and justifications. The Director of the Army Budget (DAB), OCA has overall responsibility for the budget. In order to facilitate an understanding of budget formulation, three significant environmental factors need to be recognized: (1) the stages within budget formulation, (2) the pertinent milestones prescribed to the Army, and (3) the nature of the Army submission. Each of these points is discussed below.

(1) Stages Within Budget Formulation. Budget formulation, similar to PPBS itself, is composed of three sequential sets of activities or stages, each with a particular output. The budget is developed within the Army, reviewed within the Executive Branch, and justified to the Legislative Branch. The three stages, the start/stop points, and the key input/output documents are discussed below and illustrated in Figure 4-9.

(a) The Army development stage consists of the field and ARSTAF participation in estimating the resources required to support plans and programs. Immediately following the approval of the program in the APDM, the final OSD Budget Estimate Guidance (BEG) is issued for preparing the resource requirements to implement the approved program. The Army development stage is completed with the submission of the ABE documents to OSD in mid-September.

(b) The Executive Branch review stage consists of the OSD/OMB, SECDEF, and Presidential reviews of the ABE. The reviews include hearings, decision package sets (DPS), Army reclaims, SECDEF major issue decisions, and Presidential approval. The Executive Branch review stage is completed with the submission of the President's budget to Congress in late January.

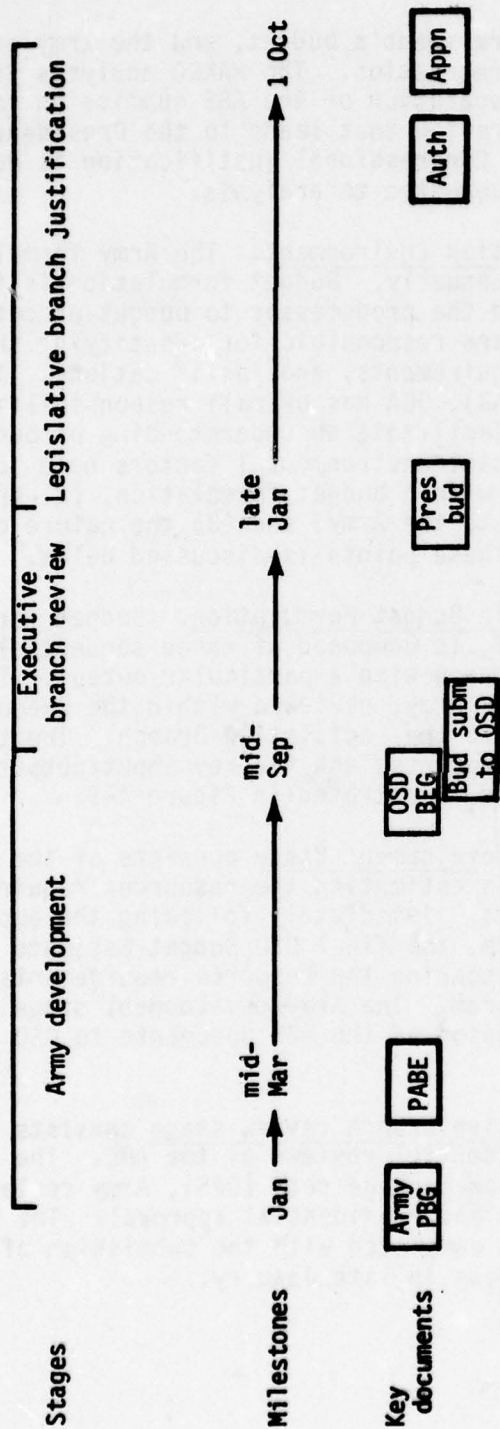


Figure 4-9. Budget Formulation Overview

(c) The Legislative Branch justification stage consists of the presentation and justification of budget requests before congressional committees. The various justifications are presented by the SA, CSA, and other Army representatives. The level of detail is as requested by the respective committees. The Legislative Branch justification stage is completed with the passage of authorization and appropriation bills.

(2) Milestones Prescribed to HQDA. Each of the three stages of budget formulation is marked by a distinct terminal milestone imposed by higher echelons of the government. In addition to terminal milestones, there is an official initiating milestone for the Army development stage--the release of the OSD BEG. According to AR 1-1, the BEG is the official initiating document for budget formulation. The BEG is correlated to and immediately follows the approved program, the APDM. The regulation assumes the BEG is available in early August; and notes that the ABE is due to OSD 15 September, some six weeks after the BEG. The six weeks are not adequate time to permit subsequent field participation. The Army budget is developed by the ARSTAF and from the field based on a series of tentative guidance documents. Details of the CY 78 experience are discussed in paragraph 4-4c below and illustrated in descriptive network diagrams at Appendix E, Annex III.

(3) ABE Submission. The ABE submission is the focal point of what the Army requests and the starting point for the reviews and justification. The ABE submission is the principal subject of this analysis.

(a) Initial Justification: ZBB. The overall three-stage budget formulation sequence and milestones described above remain essentially unchanged from year to year. However, new techniques and changing requirements within each stage are common; the actual budget development and executive review stages experienced a significant change with the implementation of ZBB. Previous to CY 77, the budget was developed and reviewed at a single resource level. In CY 77 and 78, ZBB required the development of the budget at three resource levels--minimum, basic, and enhanced--plus bands between the levels for submission in the ABE. In CY 78, three levels of estimates were projected for a five-year budget submission instead of a single budget year submission.

(b) Final Justification: Appropriations and Funds. The ABE includes estimates prepared by the several Army Appropriation and Fund Directors, under the overall supervision of the Director of the Army Budget (DAB). Although not a complete list of budget estimates, the principal ABE are the 11 appropriations and 3 revolving funds listed in Table 4-1. All of these are included in the analysis and resulting descriptive network diagrams.

Table 4-1. Principal Army Budget Estimates

Short title	Full title	Responsible appropriation/ fund director
MPA	Military Personnel, Army	DCSPER
RPA	Reserve Personnel, Army	CAR
NGPA	National Guard Personnel, Army	CNGB
OMA	Operation & Maintenance, Army	COA
OMAR	Operation & Maintenance, Army Reserve	CAR
OMARNG	Operation & Maintenance, Army National Guard	CNGB
PROC	Procurement (all five)	DCSRDA
RDTE	Research, Development, Test and Evaluation	DCSRDA
MCA	Military Construction, Army	COE
MCAR	Military Construction, Army Reserve	CAR
MCARNG	Military Construction, Army National Guard	CNGB
AIF	Army Industrial Fund	COA
ASF	Army Stock Fund	DCSLOG
AMF	Army Management Fund	COA

b. Budget Development Stage. The development of the Army budget is the first of three stages of budget formulation. The MAKRO research and analysis of budget development concentrated on documentation of the actual CY 78 experience as the starting point for observations and prescriptions. In CY 78, the budget development stage occurred in parallel with the programing phase of PPBS. Certain key budget development activities have been revised for CY 79. The revisions are designed to eliminate redundancies in the flow from programing to budget formulation at HQDA and reduce the quantity and improve the timeliness of MACOM submissions. The designs of the revisions are consistent with the MAKRO understanding and observations on the CY 78 experience. The CY 78 actual experience will be discussed first, followed by a discussion of the CY 79 projection. Insights are presented in paragraph 4-5 below.

(1) Budget Development--CY 78. In CY 78, the MACOM budget development activities began concurrently with program development activities. The first year of the program and the budget year are the same. The parallel developments are illustrated in Figure 4-10. For some budget estimates (e.g., National Guard, Procurement, RDTE), MACOM COBE do not apply or are not a basic requirement. In most cases, the HQDA appropriation and fund directors do need the MACOM COBE as a basic input. The January PBG was the final guidance for MACOM program development and the initial guidance for budget development. The MACOM recommended program was submitted in the PARR; the DA recommended program was submitted in the POM; and the SECDEF approved program was finalized in the APDM. The January PBG was used in formulating MACOM COBE instructions to installations; and the installation COBE were due to MACOM before the Army program was recommended to OSD. The May PBG provided to the MACOM the Army recommended program as a basis for the MACOM to finalize COBE (and revise installation COBE). Both the installation initial COBE and the MACOM revised COBE are prepared without an OSD approved program which is the final budget guidance. All the budget estimates are then reviewed and revised by the ARSTAF whenever the BEG is released. In CY 78, the BEG was not available until early September, and the ABE had to be delayed one week; this gave the Army only three weeks to finalize its entire estimate. The Budget Mainline network diagram, Appendix E, Annex III, Network M, portrays the general sequence of events and interrelationships between guidance documents and budget development activities during CY 78. Other budget formulation network diagrams in Appendix E, Annex III, contain additional details too numerous to be shown in a single diagram.

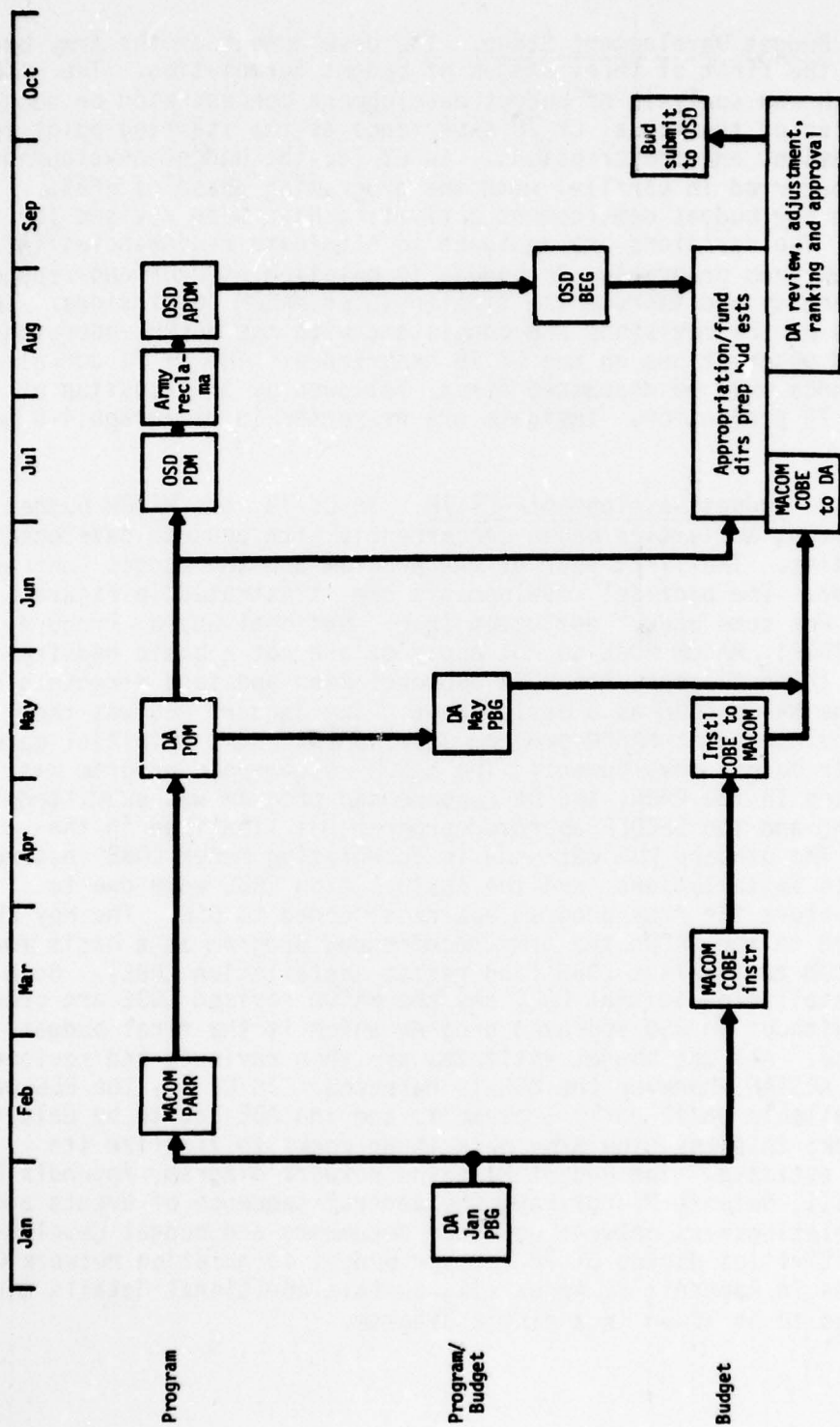


Figure 4-10. CY 78 Budget Development Experience

(2) Budget Development--CY 79. For CY 79, the MACOM and DA program and budget development activities are to be integrated as shown in Figure 4-11. In December 1978, DA provided to MACOM core data for formulation of MACOM PARR. The core is the fourth level of zero base data developed within the Army; it is a subminimum level for aiding the decisionmaking on those resource related issues to be identified from ZBB minimum level up to ZBB enhanced level. The MACOM identify issues for DA programing consideration in the PARR. DA responds to the PARR issues by advising the MACOM to develop selected issues. The MACOM are to respond in the Program Analysis and Budget Estimate (PABE); the PABE is a new document that consolidates the detailed submission of the prior year PARR and the budget year portion of COBE for the first program/budget year. The PABE issues will be incorporated into the Army recommended program, the POM. The May PBG will reflect how the MACOM budget year issues succeeded in the Army POM. The MACOM are not to submit budget estimates in the Command Operating Budgets (COB) in July; the COB will request the apportionment distribution and provide only limited budget year (BY) justification as requested by HQDA; e.g., backup exhibits required by OSD. The ARSTAF will use the first program year recommended to OSD as the budget for development of additional detailed information. A second significant feature of the program/budget integration for CY 79 is the merging of the PGRC and the BRC into a single entity, the PBC. This merger reflects elimination of the former practices of surfacing new requirements during budget formulation and rehashing decisions.

c. Budget Review Stage. As shown in Figure 4-9, Executive Branch review is the second of the three stages of budget formulation. These reviews begin with "working level" hearings between OSD/OMB analysts and Army appropriation/fund directors immediately following submission of the Army budget estimates to OSD in mid-September. The reviews progress sequentially through ever-increasing levels of decisionmaking responsibility until the ABE are integrated into the President's budget and submitted to Congress in late January.

(1) Executive Branch Review--CY 78. In CY 78 the joint OSD/OMB "working level" hearings began about 22 September after all ABEs, except OMA, had been submitted, and continued until late October. The delayed OMA submission was the result of an internal change in ARSTAF responsibility for preparation of personnel requirements for OMA; inexperience and a lack of coordination were major contributing factors. During this five-week period, OSD identified significant budget issues and organized these issues into decision documents called decision package sets (DPS). Initial SECDEF decisions in late October initiated the DPS cycle in which the Army was provided opportunity to reclama.

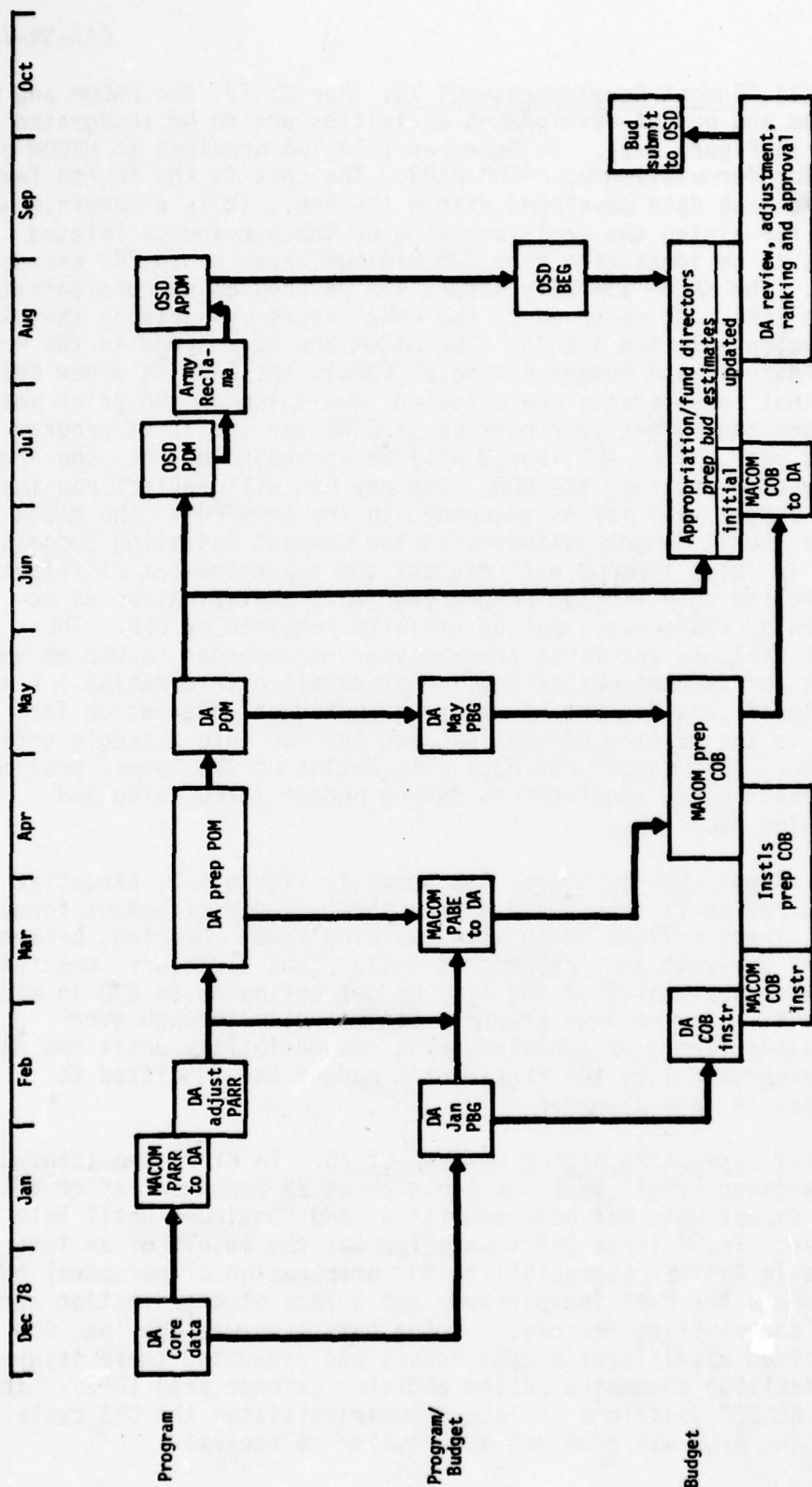


Figure 4-11. Projected CY 79 Budget Development

In the early stages of the cycle, DPS were acted upon individually. As the cycle continued, turnaround time for reclama shortened; the initial five-day turnaround time was distributed as shown in Figure 4-12. A considerable degree of turbulence was experienced late in the DPS cycle when OSD made a major re-ranking among issues discussed up to that time and identified a large number of new issues not previously anticipated or discussed. These surprise actions by OSD created a heavy additional workload for the ARSTAF on very short notice, particularly in connection with the preparation of budget justification documents. The DPS cycle terminated on 10 December with a major issues meeting between the SA, CSA, and the SECDEF. The major issues meeting was followed by Presidential review of the Defense budget estimate, Presidential decisions announced 19 December, and final SECDEF decisions on 29 December. These decisions then served as guidance for Army appropriation and fund directors to prepare justification documents to be coordinated through OSD and presented to Congressional committees following submission of the President's budget to Congress in late January.

(2) Executive Branch Review--CY 79. For CY 79, no significant procedural changes are anticipated. OSD has reiterated that the milestone date for ABE submissions is 15 September, and the ARSTAF is planning budget formulation activities accordingly. ARSTAF procedures for development of the OMA budget have been revised, and late submission of the OMA budget is not expected to recur. If new procedures are again introduced by OSD, the Army will be obliged to react as effectively as possible in the time available.

d. Legislative Branch Justification Stage. The last stage of Army budget formulation, as shown in Figure 4-9, is Legislative Branch justification. This stage begins about 15 days after Congress convenes and after the President submits his budget. Soon thereafter, the House and Senate budget committees begin separate hearings. They invite testimony from witnesses for the Administration as well as subject matter experts and other witnesses. In preparation for this process, in January the OMB publishes and transmits to Congress the approved DOD budget as part of the President's budget. The President's budget reflects the Army September OSD budget submission (the ABEs) as adjusted by the OSD/OMB reviews and decisions of the SECDEF and the President. The Army portion of the President's budget is accompanied by supporting books (referred to as justification books) which contain descriptive summaries and justification documents prepared by appropriation/fund directors. These congressional justification materials are prepared in formats prescribed by OSD and are reviewed and consolidated by the DAB before being forwarded. The MAKRO Study

did not examine this stage; consequently, the network diagram of the Budget Mainline in Appendix E reflects only the preparation of the justification books.

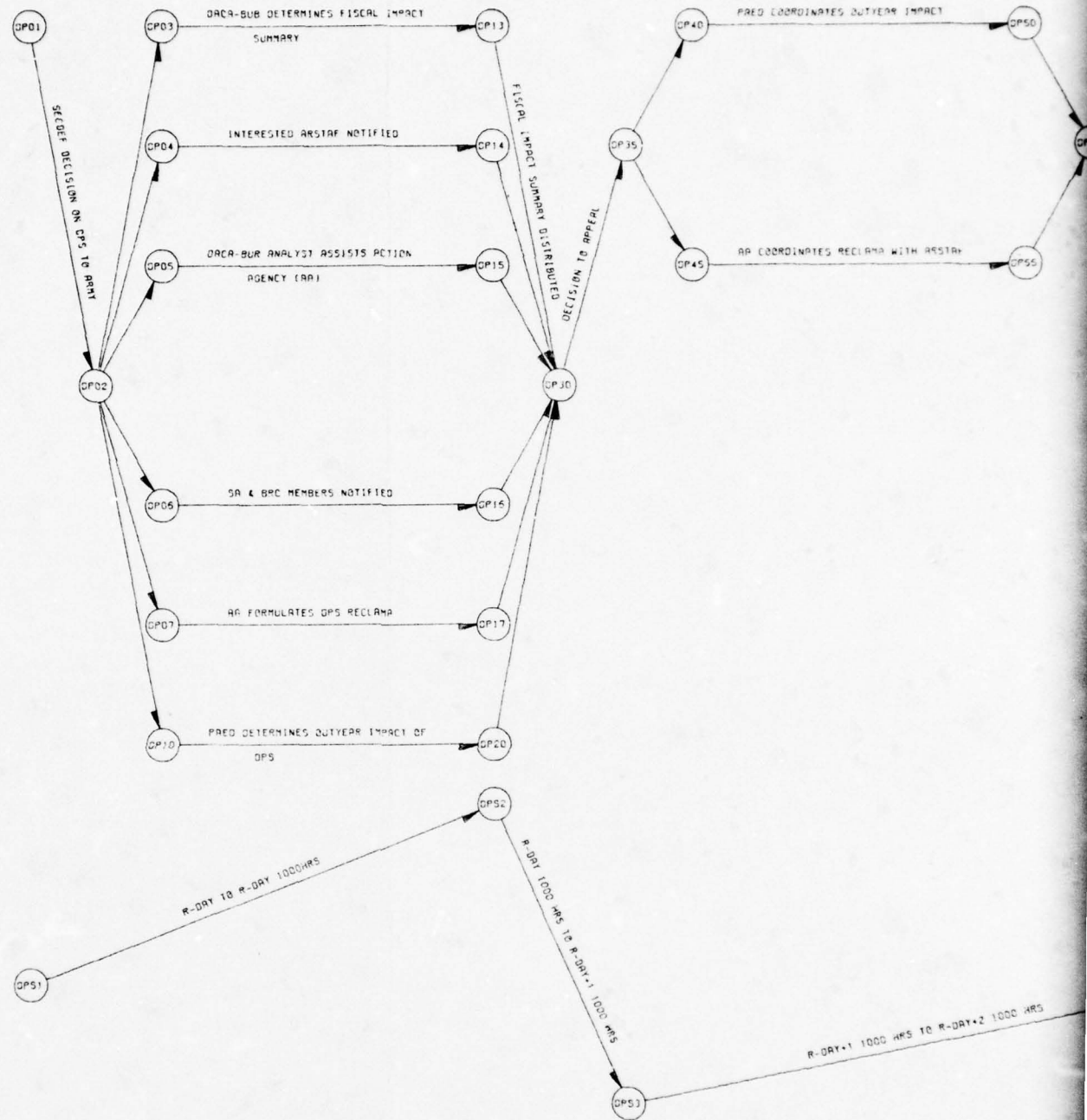
(1) Legislative Justification Experience--CY 78. In CY 78, OSD prescribed dates between 27 December 1978 and 10 January 1979 for Army submission of justification books for the FY 80 budget. The DAB, in turn, prescribed submission dates for advance copies from appropriation/fund directors between 21 December 1978 and 3 January 1979. As mentioned earlier, surprise actions by OSD late in the DPS cycle complicated the preparation of some justification materials and created a heavy additional workload. However, all materials except OMA were prepared in time to meet the OSD publication date of 22 January 1979.

(2) Legislative Justification--CY 79. For CY 79, no known procedural changes are anticipated. However, in this regard, the integration of program and budget activities now under way within the Army may prove to be a two-edged sword. In recent years the degree of interest shown by many individual members of Congress has often increased requirements for detailed justification of budget requests in diverse areas. The reduced volume of input being required from the field by HQDA in the CY 79 procedure could conceivably create a paucity of backup data that may have to be gathered in a last minute rapid reaction mode to satisfy Congressional demands.

4-5. RECAPITULATION. The MAKRO analysis of the PPBS environment, activities, and projected changes has led to the following insights.

a. The Army planning phase of PPBS focuses on providing coordinated HQDA proposals to the JCS. Army planning proposals are integrated with those of the other Services in developing JCS positions. The integration occurs in the JSPS. The JSPS follows a highly structured Joint Staff coordination procedure; however, the Joint Staff occasionally has trouble maintaining the JSPS schedule.

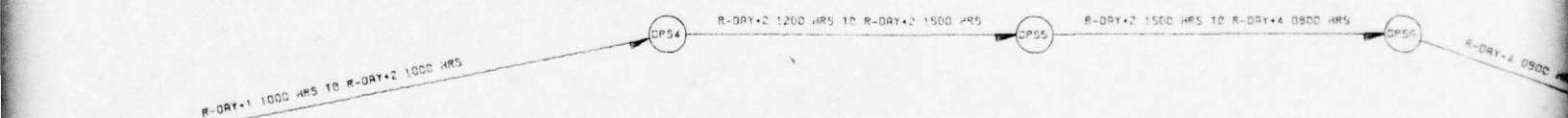
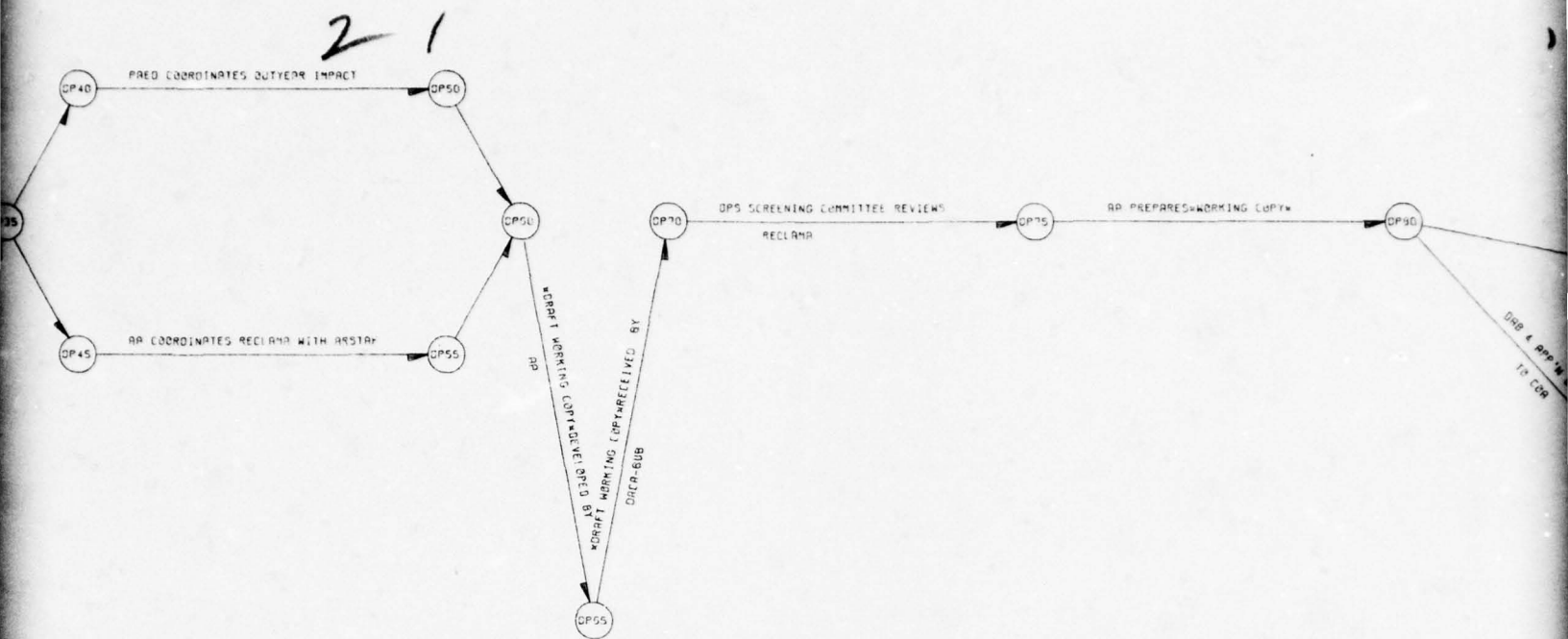
b. In CY 78, the CG replaced three OSD planning and programing guidance documents (DPPG, TPPGM, and PPGM). Prior to CY 78, the DPPG provided strategy guidance in October; the TPPGM provided tentative manpower and fiscal guidance in November; and the PPGM provided the final guidance in February. The CG schedule provides for a draft in late January and a final CG in March; both the initial and final OSD guidance are received later than in the past.



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27 OCT 78

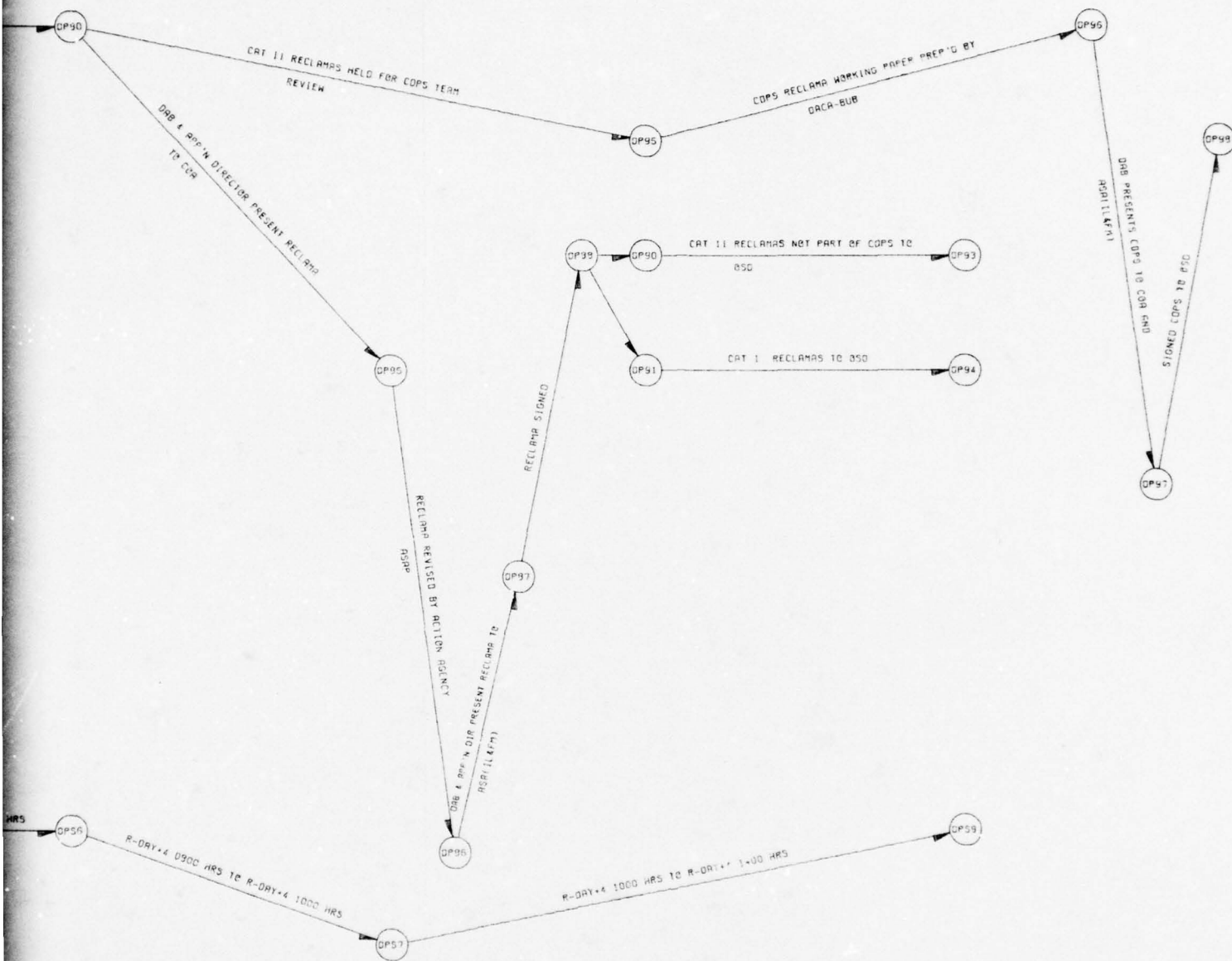
OPS CY



DPS CYCLE/DPS RECLAMA TURNAROUND IN
FIVE DAYS (22- 12)

Figure 4-12. Five-day Turnaround for DPS Reclama

3



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CAA-SR-79-6

c. The JSPS responds to DOD PPBS planning and programing guidance documents with the intent of influencing the next set of that OSD guidance. In CY 78, the CG schedule caused JSPS milestones to change. The complete impact of the milestone changes will be felt by the Army in CY 79 and will require changes in Army planning milestones.

d. An output of the JSPS is the JSPD. The JSPD advises the President and SECDEF on threat, military objectives, strategy, risk, and force requirements and provides feedback on the CG from the previous cycle.

e. The Army is tasked to provide input to the JSPD. Army planning provides that input by determining the forces required to attain national security objectives given the hostile environment dictated by scenarios described in the preceding CG.

f. The force development process is a foundation of Army PPBS. The analysis that generates Army force requirements proposed for the JSPD is accomplished in three months. The integration of Service proposals in JSPD takes five months (see the CY 79 model at Figure 4-4). Five months later, the JSPD planning force begins a two-month attenuation process, based on PPBS decisions such as the CG, to prepare program force development guidance.

g. The objective of planning is to develop a force that represents a capability level which the Army must attain if it is to execute the strategy. Army planning does not have as an objective the development of coordinated non-force requirements that would complement the planning force. The programing objective is to improve the capability of the Army over time by developing a balanced scheme to man, equip, train, supply, administer, maintain, and sustain the entire Army within projected resource constraints. The program force is one the Army may be able to attain within expected resource constraints.

h. The planning force input to the program force development process habitually leads to a program force requirement that far exceeds manpower limitations. Normally, support forces are attenuated in order to achieve the manpower limitations. This results in a force structure that is significantly different from the balanced force recommended as a result of the Total Army Analysis.

i. The program force represents a capability level which falls short of the planning force capability. There is no coordinated effort to address this shortfall. The ARSTAF individually

attempts to get the most from the resources allotted through proponent sponsored studies of tactical and support systems, equipment procurement, and aspects of combat, combat support, and combat service support activities. The results of these studies support program issues vying for funding during POM development. There is no central analysis of the results to develop a comprehensive capability plan.

j. Army priorities guidance is generated by planning for programing; that guidance considers both force requirements from the planning phase and resource issues in the programing and budgeting phases. The guidance is an attempt to resolve the dichotomy of Army requirements for resources and the projected availability of resources.

k. The planning phase focuses on the period 7 to 10 years into the future while the programing phase focuses on the period 2 to 6 years hence. The output of planning and programing are not mutually exclusive. Some aspects of the planning force may impact on program development, e.g., force modernization has manpower considerations. Likewise, RDTE, procurement, and some MCA programs may extend beyond the 2-6 year period. The planning impact on programs and the impact of programs extending beyond the program years are both the concern of programing.

l. The programing phase is initiated prior to the release of the draft CG in January. Army program force development and subsequent computation of materiel requirements (LOGSACS, AAO) are completed prior to the release of the draft CG. The potential exists annually for Army programing efforts to be affected seriously by OSD guidance changes; this was the case in CY 78.

m. With the CY 78 level of participation, the Army programing processes cannot react to extensive OSD guidance and produce a program in four months of normal work weeks. The MAKRO interviews illuminated the fact that, during peak programing periods, many ARSTAF action officers devoted 140 to 160 hours of overtime per month in order to generate a POM.

n. In CY 78, the MACOM PARR were detailed, voluminous documents which were received too late. The size of the documents and the arrival time resulted in very little consideration being given them prior to the HQDA Functional Review. The Functional Review established relative priorities for the program issues and became the key window for programing. Major changes to the procedures for MACOM participation are being implemented in CY 79.

o. In CY 79, MACOM are required to submit PARR, PABE, and COB documents on 15 January, 26 March, and 16 July, respectively. The PARR will be received at HQDA prior to the Functional Review, and issues in the PARR will be formatted consistent with the HQDA PDIP issues. The PARR is for surfacing issues which will compete for funding. HQDA instructions written for the PABE and COB submissions discourage the practice of raising new funding issues in these documents. The ARSTAF intent is not to redevelop program content during the subsequent Appropriation Review and budget development processes. (See Figure 4-13 for an illustration of scheduling relationships between field input and major Army reviews.)

p. The CY 78 MACOM PARR issues were submitted in Program Issue Narrative (PIN) format. The PIN were developed independent of HQDA and had little or no correlation to the PDIP being used at HQDA for program development. It was difficult for DA to assimilate the PIN and confusing for the MACOM to track the status of their programing issues during POM development. Subsequently, it was very difficult for MACOM programing and budgeting personnel to discern the results of HQDA decisions in the May PBG.

q. In CY 78, much of the detail requested by HQDA for MACOM submission in the COBE was similar to data presented in the PARR. In generating the two massive documents, there was considerable redundancy of effort in the field.

r. In CY 78 and before, the MACOM used the January PBG for installations/units to participate in MACOM COBE. From the preparation of installation COBE instructions to the receipt of installation COBE, approximately three months elapsed. From the receipt of installation COBE to submission of MACOM COBE, another two months elapsed.

s. In the CY 79 approach, the PABE replaces the COBE for BY presentation. From the January PBG to the PABE submission, the MACOM have approximately two months. The October PBG will have to be used to allow time for the installations to prepare formal BY estimates.

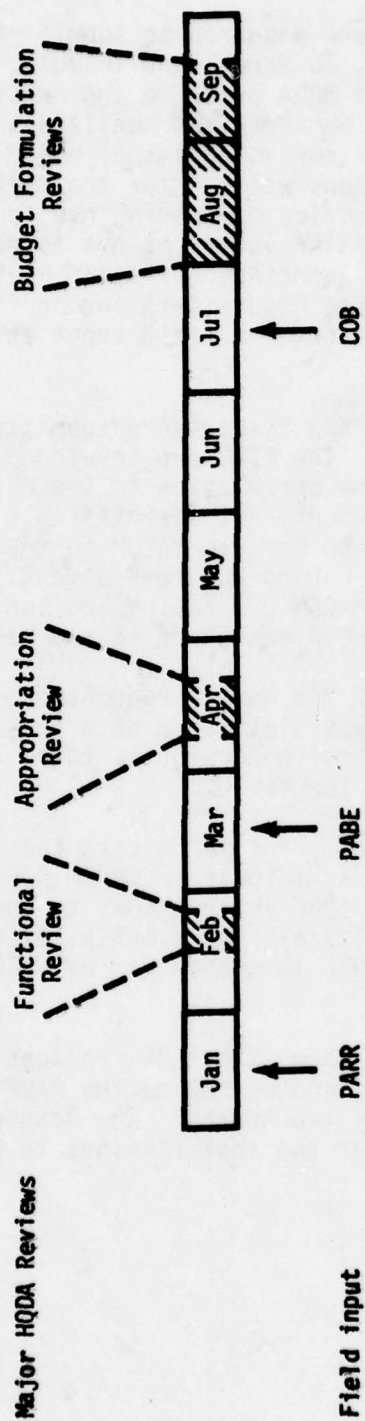


Figure 4-13. Field Input and Major HQDA Reviews

t. In CY 78, at HQDA level, there was a concerted effort by DA programers and budgeteers to track the first year of the program into the ABE submission to OSD. The ABE was the result of active involvement of ARSTAF programers and budgeteers. The aggregation of funding data into budgetary detail and DPS issues makes it difficult to recognize functional programs.

u. The ABE reviews at HQDA are extensive and time consuming. HQDA conducts many budget reviews before the SECDEF final approval of the program in the APDM. The OSD BEG follows the APDM and the intra-Army ABE reviews. The three weeks allotted (CY 78 experience) from the OSD BEG to ABE submissions is not adequate for ABE finalization and reviews.

v. The CY 79 efforts to obtain MACOM budget input prior to POM submission and effectively use that first year of the program for the FY 81 budget estimate conceivably could reduce the scope of the budget review process. The Army proposed programs would have to be limited to changes directed by OSD only. The final OSD directed changes would still require post-APDM/BEG adjustments. The ARSTAF, in the summer, could devote time formerly used for budget preparation to analyzing the program.

w. Interviews conducted during the study consistently highlighted the lack of a common understanding of the PPBS. Terminology used in PPBS is highly inconsistent--terms used throughout the Army and DOD imply different meanings to different individuals. There is no authoritative reference or dictionary for defining terms or processes. The PPBS Handbook developed by GRC for PAED should aid tremendously in promoting a consistent understanding of PPBS throughout the Army.

CAA-SR-79-6

CHAPTER 5

MANAGEMENT PRESCRIPTIONS

5-1. IDENTIFICATION OF REQUIREMENTS. In developing and refining the network diagrams for the PPBS processes, the study group requested that the interviewees discuss any perceived problems associated with their areas of responsibility. In addition, the rigorous analysis of the activity interrelationships illuminated problems to the study group; the analysis was conducted during-- and the problems identified flow from--CY 78. The individual problems were examined, the cause and effect researched, and then management prescriptions were formulated. A management prescription suggests a means of correcting a problem within a particular PPBS process. The prescriptions were briefed to the study sponsors at In-Process Reviews (IPR). The individual problems for which prescriptions have been developed are discussed in this chapter. The format includes a problem statement, a discussion of the cause and effect of the problem, the nominated prescription, and the expected impact of fulfilling that prescription. The chapter concludes with a series of tables summarizing the problems and their associated prescriptions.

5-2. PLANNING PRESCRIPTIONS. The schedule for the JSPD development has been revised. Using the information gathered on the planning activities and the revised JSPD milestones, the MAKRO Study is able to project a revised schedule for the Army activities (paragraph a, below). The analysis of the revised Army schedule led to a prescription aimed at synchronizing guidance for program force development (paragraph b, below).

a. Problem: Army Planning Activities Must Change. The schedule for the Army planning activities in CY 79 has to be revised from CY 78 to accommodate the revised JSPD milestones. Figure 5-1 displays the planning experience for CY 78.

(1) Cause. Key milestones in the JSPS cycle for the years immediately preceding the 1978 JSPS cycle were: the publication of JSOP I strategy in May to influence the Defense Policy and Planning Guidance (DPPG) document in September; and the JSOP Executive Summary, published in December, to influence the Planning and Programing Guidance Memorandum (PPGM) in February. OSD consolidated the DPPG and PPGM into the CG which is projected by the MAKRO Study to be released in January. The CY 78 and earlier JSPS schedules are not in phase with the projected January release date for the CG.

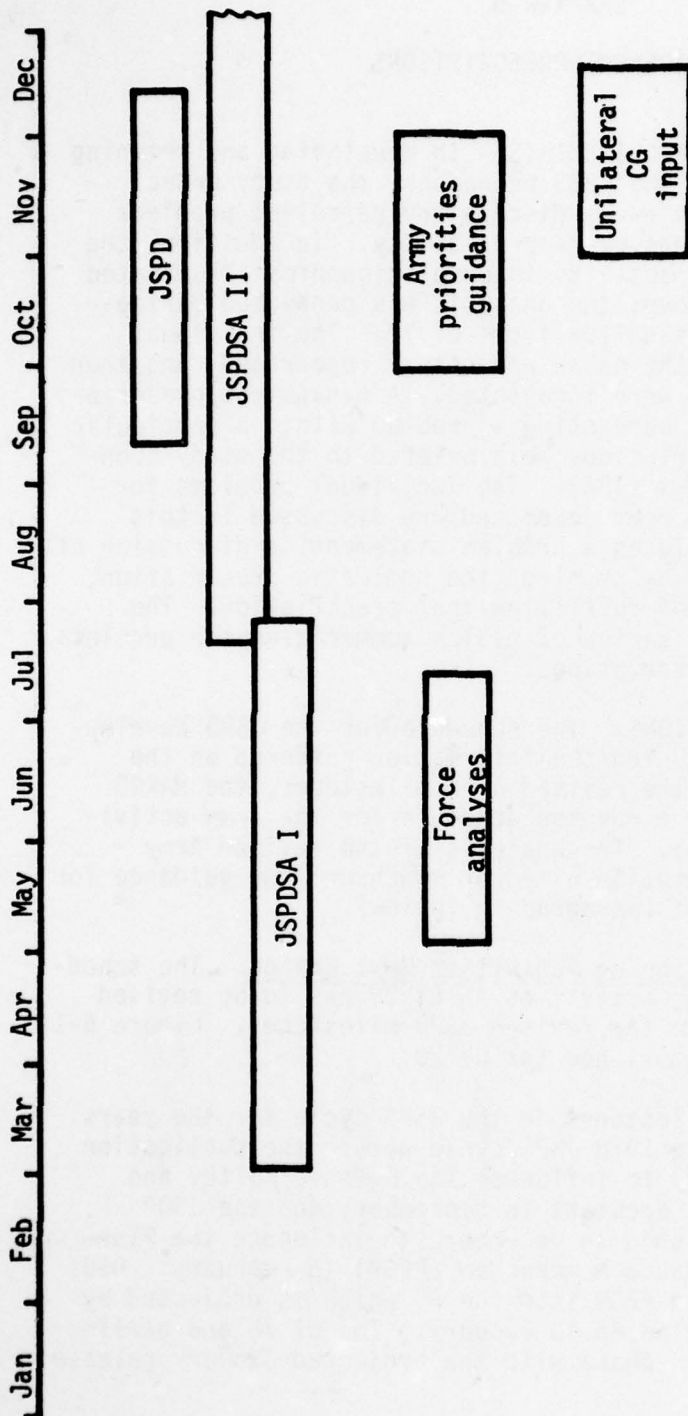


Figure 5-1. CY 78 Planning Experience

MOP-84 corrects the timing of the JSPD by specifying that JSPDSA I will be completed by 15 March and JSPD will be forwarded to OSD 60 days prior to the draft CG. Force analyses must be completed prior to JSPDSA II coordination; that coordination is projected to begin 1 June.

(2) Effect. The projected January-March schedule for JSPDSA I development must be compared to the March-July schedule of CY 78; scheduled completion is four months earlier in the cycle and two months less time is allowed for completion of work activities. The force analyses would be completed by 1 June, representing a shift of six weeks with no compression. JSPDSA II coordination should start six weeks earlier. JSPD coordination would start two weeks earlier and be compressed one month to be completed by September/October (see Figure 5-2).

(3) Prescription. Provide the ARSTAF with a tentative planning calendar for the CY 79 cycle. Key milestone dates should include: JSPDSA I complete 15 March; force analyses by 1 June; JSPDSA II start 1 June. Alert Army component commanders to return force requirements to HQDA by 1 June.

(4) Impact. The anticipated schedule will: provide a contingency plan for a very probable change to the JSPD schedule; facilitate the development of work schedules; and allow the same amount of time for completion of force analyses. The CY 79 projection allows slack time for coordinating an undetermined number of corrigenda during JSPDSA II coordination.

(5) Status. This prescription was presented at an IPR in October 1978. It has been used as a basis for preparing work schedules for the preparation of analyses. It is anticipated that the Joint Staff will strive to complete the JSPD documents as outlined in MOP-84.

b. Problem: Guidance for Program Force Development is Not Synchronized with Planning Force Development. The program force development process is generated from guidance based on an earlier JSPD than will be used to influence the CG for POM development.

(1) Cause. The program force development process occurs from June to October. As explained in Appendix D and illustrated in the CY 78 segment of Figure 5-3, the planning force detailed in the JSPD in December becomes a basis for program force guidance the following June.

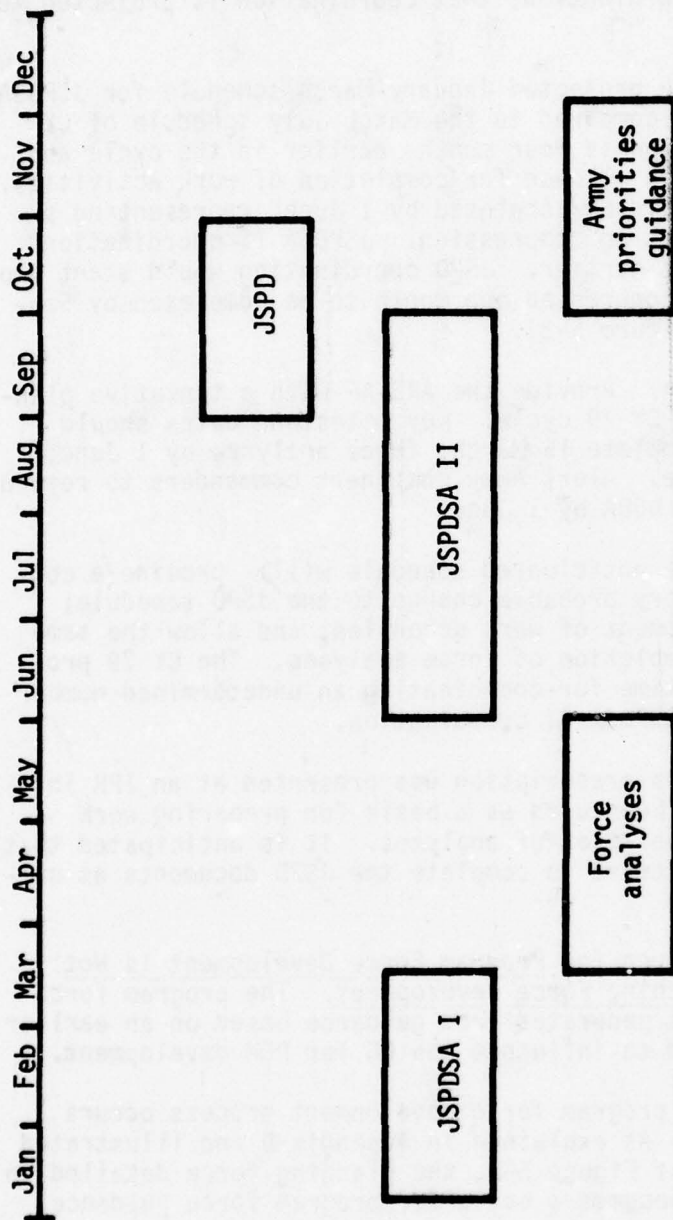


Figure 5-2. CY 79 Planning Projection

CY78

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov

Planning

JSPD

JSPDSA II

JSPDSA I

CG
input

Force
analyses

Army
priorities
guidance

Programing

Program
Force
guidance

Program Force
development process

---> Indirect

—> Direct

1

CY79

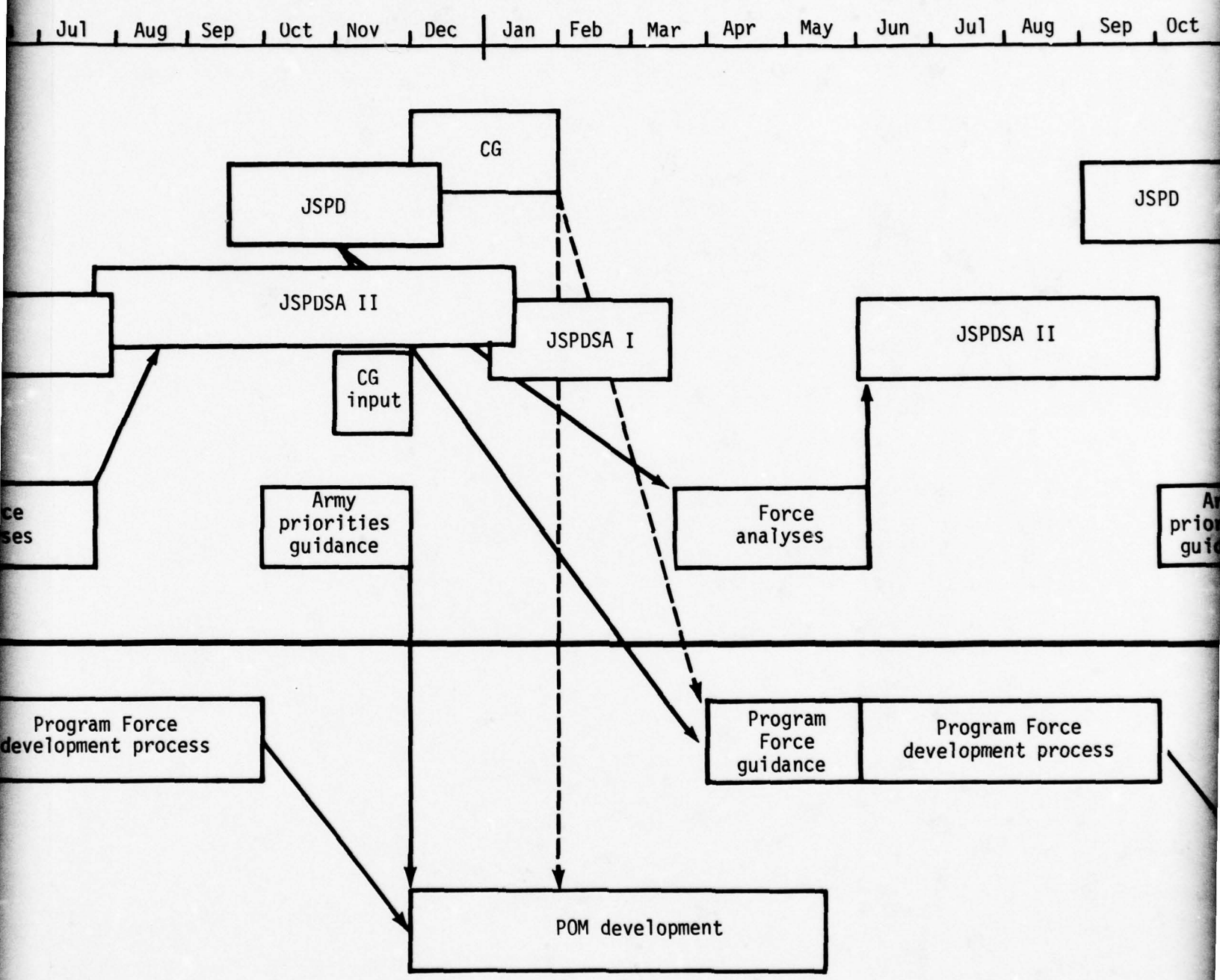
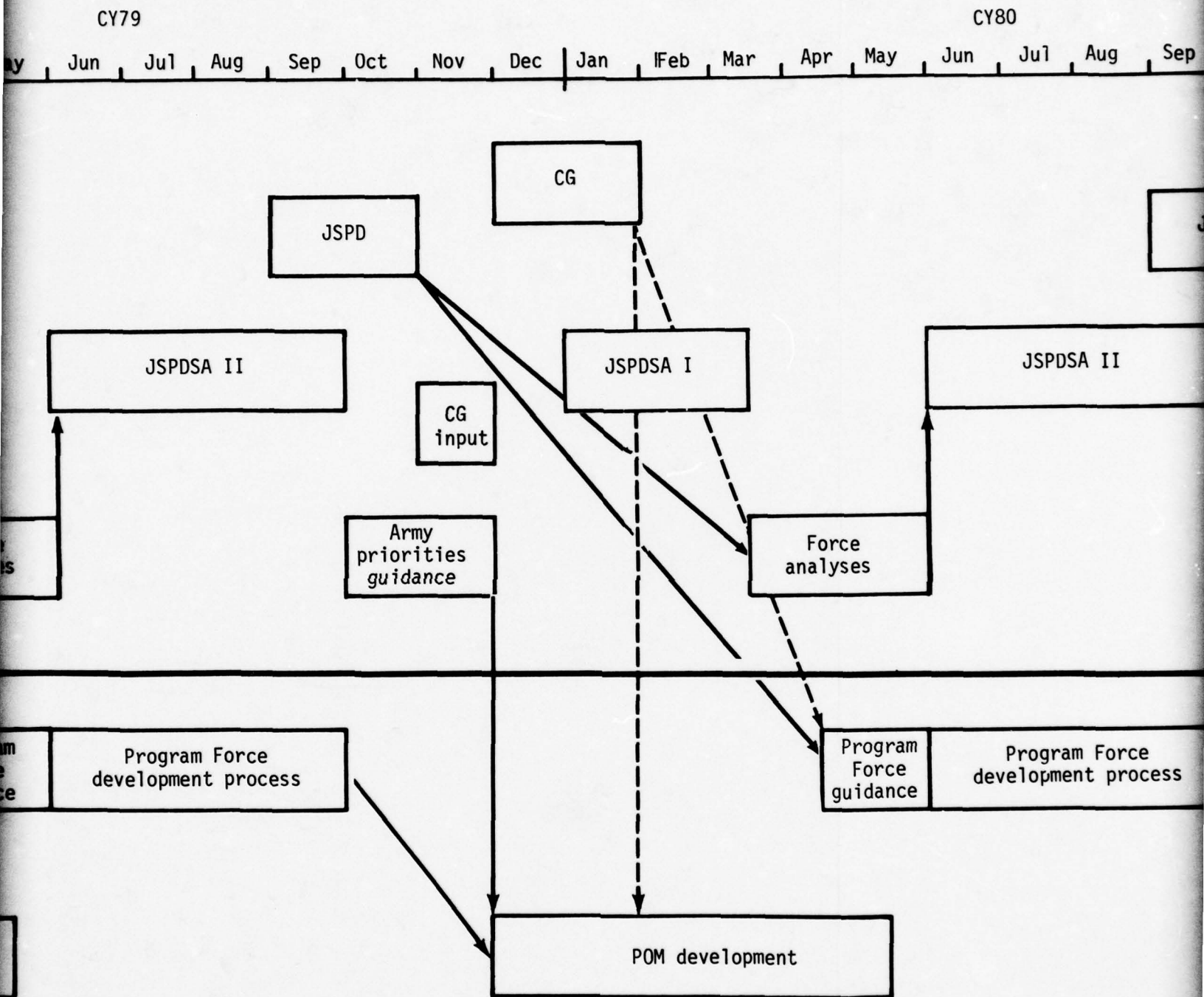


Figure 5-3. Current Program Force

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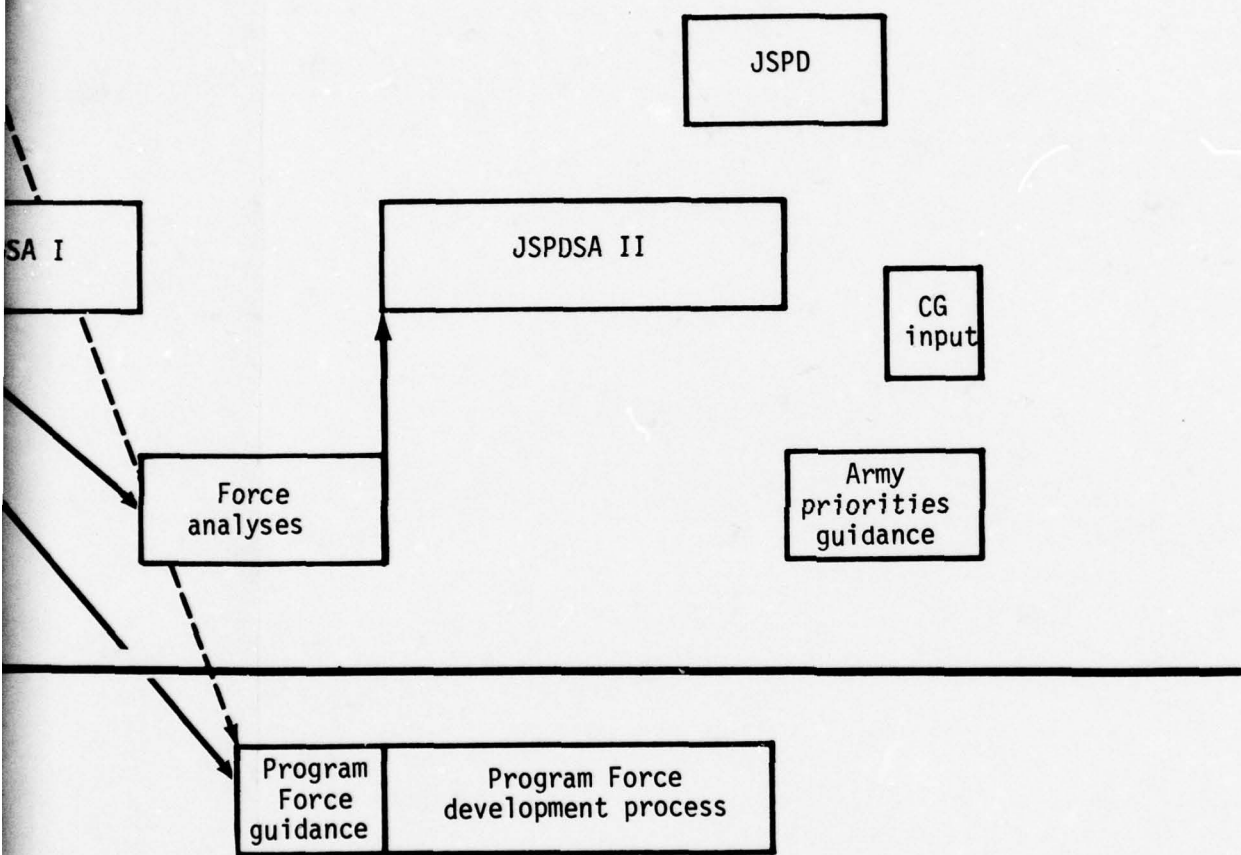


Current Program Force Development Linkage

4

CY80

Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec



M development

inkage

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The force analyses which resulted in a determination of the planning force were concluded almost one year prior to the start of program force development; e.g., the planning force developed in July 1977 was modified to provide program force guidance input to the program force development process begun in June 1978. Changes in JSPD milestones (described in paragraph 5-2a and illustrated in CY 79, CY 80 segments of Figure 5-3) will cause the force analyses done for JSPD to be shifted.

(2) Effect. Program force development is presently based on a planning force which is analyzed almost a year prior. Changes to JSPD milestones will require force analyses to be completed by 1 June.

(3) Prescription. Use the planning force available in June 1979 as a basis for program force development guidance in the same year (Figure 5-4).

(4) Impact. The prescription takes advantage of the earlier development of the planning force analysis in the CY 79 planning cycle compared to the CY 78. There is an immediate sequential flow from the planning force analysis to program force development. This permits development of the program force immediately following force analyses which are conducted in the current planning cycle.

(5) Status. This prescription was presented at an IPR in October 1978.

5-3. PROGRAMING PRESCRIPTIONS. The problems described are classified according to the nature of causal factors: those reflecting a lack of understanding, those indicating procedural difficulties, and those involving systemic disconnects.

a. Problems Reflecting a Lack of Understanding

(1) Problem: There is Confusion During Program Development Regarding Core Program

(a) Cause. The core program concept was first introduced during the FY 80-84 program development cycle. The core was to be the start point for ZBP. This "program" was arrived at by removing functional issues from the approved Army program as detailed in the FYDP.

These issues were referred to as Core Development Decrement Packages (CDDP).^{*} The resources associated with these issues were roughly estimated and subtracted from FYDP funding levels to determine core resource levels. The designation of issues to be removed from the FYDP and the determination of resources associated with these issues was accomplished by the Program Analysis and Evaluation Directorate (PAED).

(b) Effect. Staff programmers were confused as to what the core program consisted of and how resource decrements were to be spread across their various accounts. It was very difficult for program managers to insure balanced funding and to evaluate accurately the resource requirements associated with Program Development Increment Packages (PDIP). The PDIP were used to build the program from the core level to prescribed minimum, basic, and enhanced levels.

(c) Prescription. Determine the costs and impacts of functional issues removed from the FYDP in the same fashion that PDIP are developed, i.e., through a coordinated staff effort.

(d) Impact. Although more time is required to develop coordinated staff positions on the costing and impact of issues, the coordination effort will result in more accurate costing and increased understanding of the core program.

(e) Status. This prescription was presented at an IPR in October 1978. In FY 81-85 POM development, decrement issues were designated by ODCSOPS and costed by the staff in a coordinated effort.

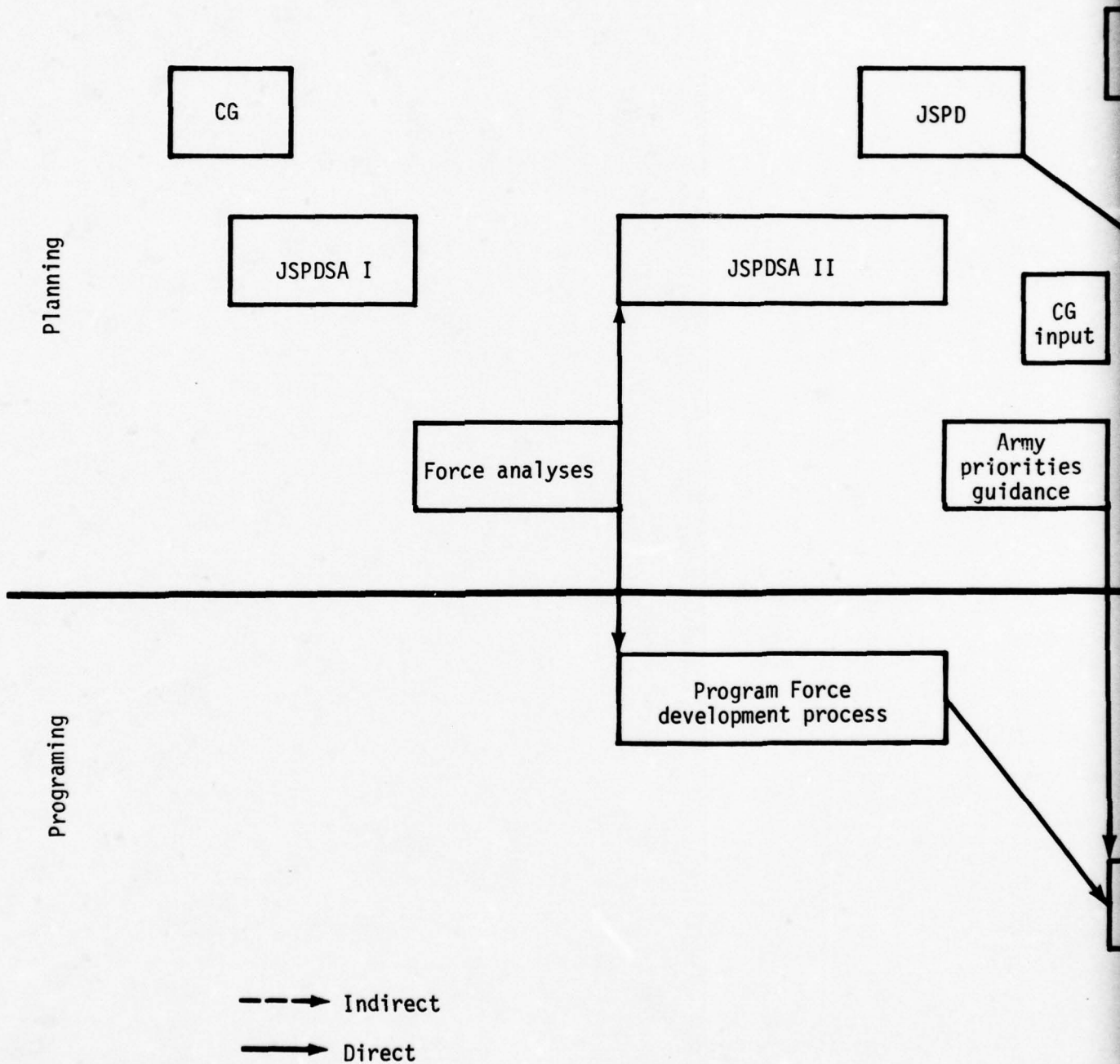
(2) Problem: Program Analysts are not Aware of Current Versions of PDIP. In CY 78, no control procedures existed to limit and coordinate PDIP revisions.

(a) Cause. The FY 80-84 program development cycle was the first time that PDIP were used to build the Army program. No formalized procedures were set up for controlling the PDIP and revisions. More than 200 PDIP were surfaced and more than 1,000 revisions occurred in an eight-week period.

^{*}In CY 79, these issues are being referred to as "negative PDIP."

CY79

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov



2

CY79

CY80

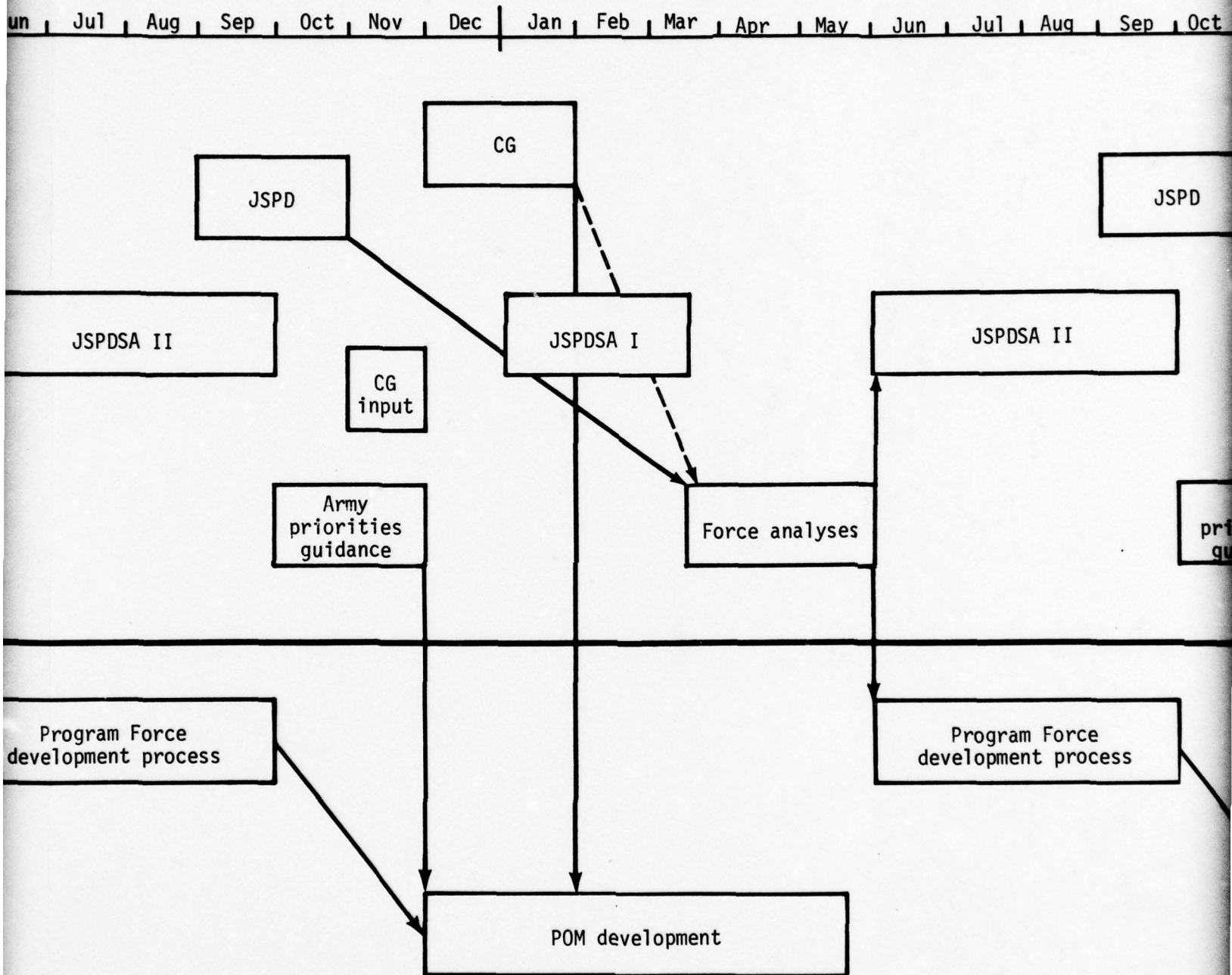
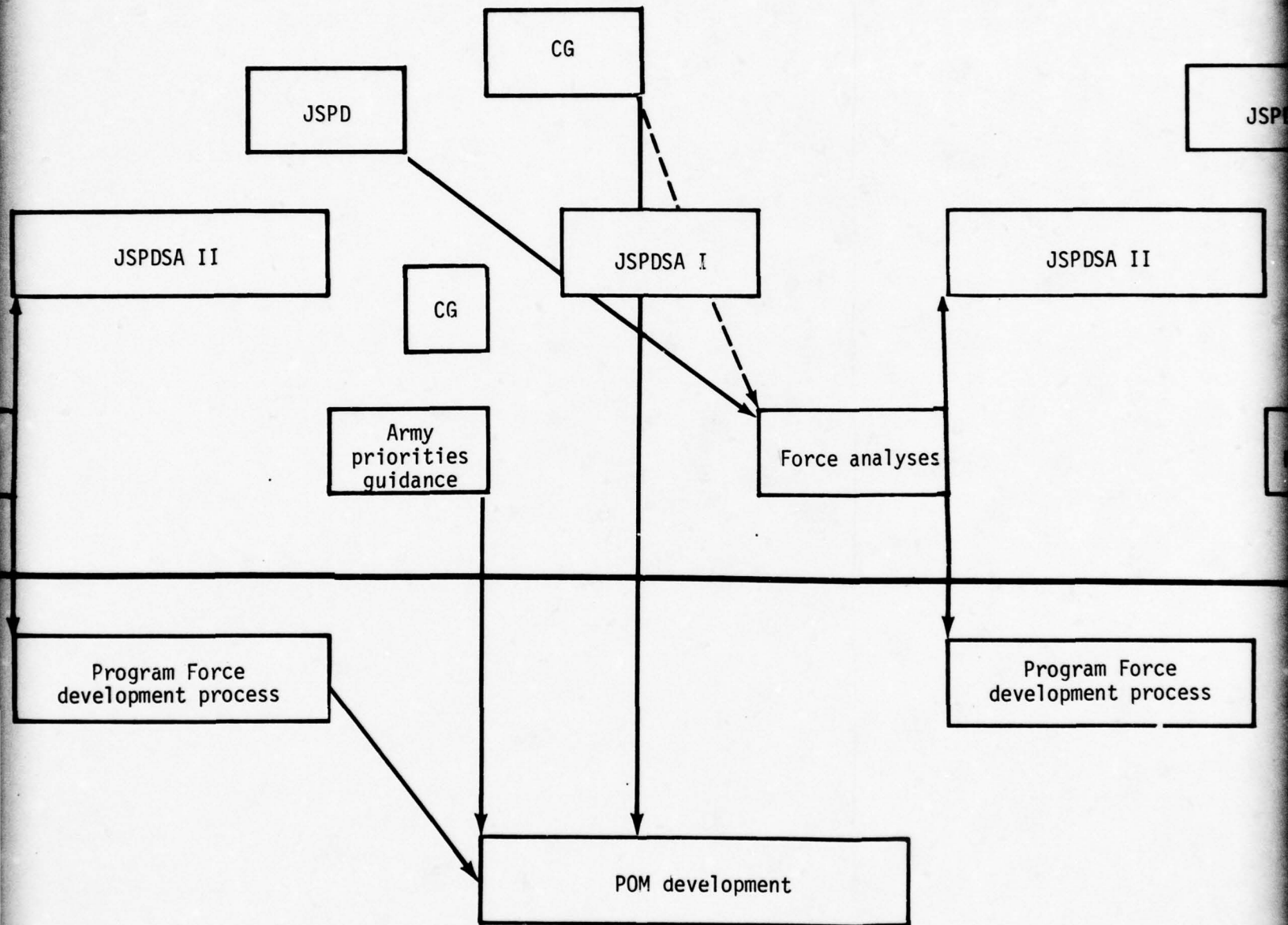


Figure 5-4. Proposed Program Force Development process

CY80

CY81

Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep



sed Program Force Development Linkage

CY81

4

Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |

JSPD

JSPDSA II

CG
input

Force analyses

Army
priorities
guidance

Program Force
development process

ment

CAA-SR-79-6

(b) Effect. Administrative handling and processing of PDIP was a much greater task than had been anticipated. The fact that so many revisions occurred in a short period of time created a situation in which staff programmers were not assured of having the most current versions in performing their analysis.

(c) Prescription. A central control coordinator should be established for PDIP and formalized procedures developed for control and coordination of revisions. Updates/revisions should be limited to once a week on a scheduled basis; e.g., staff submit revision each Tuesday to PAED; PAED publish a complete listing by Thursday.

(d) Impact. An orderly process for dissemination of PDIP data will result and program analysis will be based on a more stable data base. Staff action officers will be able to concentrate on analyzing and defining the implications of a particular issue for a reasonable period of time before reacting to modification of the issue.

(e) Status. This prescription was presented at an IPR in October 1978. In CY 79, a PAED coordinator was assigned to control the PDIP revision process. Each PDIP was assigned to a staff proponent. The staff proponents designated action officers who were responsible for monitoring and coordinating revisions to each assigned PDIP. The action officers were responsible for input of revisions to the PAED coordinator. PAED then revised the computer data bank which is accessible by ARSTAF programmers. The frequency of PDIP revisions is still not limited. In CY 79 the number of PDIP generated has exceeded 500. The administrative workload associated with PDIP processing is significant.

(3) Problem: It is Not Possible to Crosswalk Readily Between PIN and PDIP. In CY 78, the Program Issue Narratives (PIN) submitted in MACOM PARR were difficult to relate to PDIP.

(a) Cause. The PIN were received after PDIP were formulated during FY 80-84 program development. It was necessary for ARSTAF programmers to incorporate MACOM desires into existing PDIP. No procedure existed to provide the MACOM a means of accurately determining their portions of PDIP.

(b) Effect. MACOM action officers were unable to track PIN through program development and budget formulation.

(c) Prescription. Prescribe a common procedure for generation of programming issues at HQDA and MACOM level. Promulgate the procedure as part of the guidance issued in the PAPPGM.

(d) Impact. This will allow MACOM program/budget personnel to be aware of the status of their issues throughout the resource allocation process. Field input submitted for budget formulation will be based upon accurate understanding of decisions made in the programing phase. It will serve to better discipline the procedure by which issues are surfaced to compete for resources.

(e) Status. This prescription was presented at an IPR in October 1978. Changes have since been implemented which required the MACOM to submit issues for FY 81-85 program consideration in PDIP format. Procedures were implemented to insure that the MACOM issues could be tracked through program development and budget formulation.

b. Procedural Problems

(1) Problem: Considerable Effort is Expended Preparing for/ Participating in Briefings. In CY 78, considerable staff time and effort was utilized in preparing for and participating in review/ decision briefings conducted in support of program development.

(a) Cause. The Army leadership participates in program development through the conduct of review and decision briefings. In the six months from October 77 to April 78, five separate leadership review briefings were conducted; one each for Draft PAPPGM, PAPPGM, CG, Functional Review, and Appropriation Review. Each of these reviews actually consisted of a series of briefings presented to successively higher levels of the Army leadership. Each series of briefings required from 7 to 12 work days for completion. The ARSTAF reacted to these briefings by attempting to incorporate directed changes prior to the next higher level review.

(b) Effect. Almost 40 percent of the period from start of the Draft PAPPGM review to end of the Appropriation Review had a review or decision briefing in process. This required staff action officers to spend a great amount of time preparing for and/or participating in leadership briefings. The assimilation of directed changes between levels of review resulted in much overtime, minimum analysis, and iterative modification of the program.

(c) Prescription. Reduce the amount of time devoted to review briefings by:

1. Eliminating leadership briefings for either the Draft PAPPGM or the PAPPGM.

2. Providing combined SELCOM/CSA/SA level briefing.

3. Shortening the time between preparatory reviews and deferring the incorporation of changes until the review process is complete.

(d) Impact. The elimination of a review briefing will make a greater amount of time available to staff programmers for analysis and development of program issues. The consolidation of SELCOM/CSA/SA level reviews will offer the same benefits and will involve the highest levels of Army leadership more directly in decisions made to resolve staff disagreements.

(e) Status. This prescription was presented at an IPR in October 1978.

(2) Problem: PARR Documents are too Lengthy for Detailed Analysis. In CY 78, PARR documents were so lengthy and detailed that adequate time was not available to analyze them during program development.

(a) Cause. The PAPPGM tasks the MACOM to provide details in support of program development via the PARR input. During the FY 80-84 programming cycle, individual ARSTAF agencies also tasked the MACOM to provide input in the PARR that had not been requested via the PAPPGM. These taskings were in addition to the requirement for MACOM to describe the funding requirements for the command. The PAED attempted to limit MACOM requests for funding by the placing of fiscal limits, but these were largely ignored.

(b) Effect. PARR documents were extremely lengthy; many exceeded 1,000 pages. Significant portions of these documents were concerned with providing details to ARSTAF agencies--the PARR submitted by the Training and Doctrine Command (TRADOC) devoted at least 283 pages to data displays requested by ARSTAF agencies which were unrelated to PIN that described TRADOC resource requests. Furthermore, 76 of the 174 PIN submitted by TRADOC were at fiscal levels beyond prescribed limits.

(c) Prescription

1. Reduce the amount of tasking for data submission via the PARR; require staff agencies to gather data through normal channels rather than through programming channels.

2. Stress the need for MACOM to constrain PIN resource requirements.

3. Reorient the PARR to be a vehicle for identifying major MACOM resource issues.

(d) Impact. The PARR will serve the sole purpose of providing MACOM with a vehicle for proposing program changes. It will be a brief, concise statement of resource requirements that can be used by all levels of management. The ARSTAF will acquire those details which are not tasked in the PAPPGM on an "as required" basis and MACOM response to these requests will not be channeled through a major command document.

(e) Status. This prescription was presented at an IPR in October 1978. Changes implemented for CY 79 indicate that the PARR will be used solely to identify MACOM requirements and MACOM responses to PAPPGM taskings will be submitted in the PABE. ARSTAF tasking of the MACOM for response in the PABE is now done only through the PAED.

(3) Problem: LOGSACS Data are not Available Soon Enough

(a) Cause. The procurement program is developed as a result of the following sequential activities: Logistics Structure and Composition System (LOGSACS) computations, Authorized Acquisition Objective (AAO) computations, Army Materiel Plan (AMP) development, and Research, Development and Acquisition Committee (RDAC) Review. The LOGSACS computations made for POM development are based on the 30 September TAADS update and the Program Force released in mid-October. The computational process requires six weeks' effort. Final results are released about 1 December. The current process requires three iterations for corrections and revisions prior to the release of results.

(b) Effect. The AAO computations, which require LOGSACS data, cannot begin until 1 December.

(c) Prescription. Release the LOGSACS results after a single correction/revision sequence, and forward any significant changes after full LOGSACS process.

(d) Impact. This will allow the LOGSACS data to be released two and one-half weeks sooner. Subsequent activities, beginning with AAO computation, required to develop the materiel acquisition program, can begin sooner.

(e) Status. This prescription was presented at an IPR in February 1979.

(4) Problem: AMP is Not Available Soon Enough. The AMP is not available soon enough in the program development cycle. As a result, the RDAC Review of the AMP cannot be completed until early April.

(a) Cause. The AAO must be computed prior to development of the AMP. Currently, the AAO is not available until mid-December. The AMP process takes more than three months. A draft is reviewed jointly by HQDA/DARCOM in January. Review results are incorporated into the final DARCOM version which is submitted to HQDA in early February. Four iterations of consolidation/coordination/revision are then required prior to finalization.

(b) Effect. The AMP is not available until mid-March and the subsequent RDAC Review cannot be completed until early April.

(c) Prescription. Revise and correct the AMP only once after the final AMP is submitted by DARCOM.

(d) Impact. This will reduce the amount of time required to produce the AMP by more than three weeks. If this prescription is implemented in conjunction with the previous one (LOGSACS), release of the AMP by early February would be possible. Although the degree of accuracy of procurement programing data might be adversely affected, the extra time obtained for ARSTAF analysis and coordination of the impacts of the procurement program would be worth the sacrifice of accuracy in program detail.

(e) Status. This prescription was presented at an IPR in February 1979.

c. System Disconnect Problems

(1) Problem: PARR Documents are Received too Late in Program Development Process. During CY 78 program development, PARR documents were received too late to be useful.

(a) Cause. The FY 80-84 POM was the first Army program submitted in zero-base format. In the period 17 Feb - 3 Mar 78, HQDA analysts developed PDIP to describe the functional issues which would compete for resource allocation during program development. These PDIP were prioritized during the Functional Review which began on 7 March 1978. The PARR documents were due in to HQDA by 27 February 1978.

(b) Effect. The PARR documents were received just prior to the Functional Review and were extremely voluminous and detailed.

This meant that very little staff analysis of the MACOM documents could be conducted prior to the Functional Review. The MACOM input, which required tremendous effort to develop, was received too late to effectively impact program development.

(c) Prescription. Schedule PARR input to complement PDIP development process (four weeks prior to Functional Review). Alternative approaches to consider include:

1. Alternative 1. Continue the same PARR process, merely earlier.

2. Alternative 2. Convert to a two-step PARR process requiring:

a. A preliminary PARR from the programing MACOM in mid-December which nominates PIN and provides general resource implications.

b. DA staff review PARR; identify PIN to be included in PDIP.

c. DA request further details on designated PIN be submitted by MACOM in a final PARR (February).

(d) Impact. The ARSTAF will have access to MACOM requirements early enough to give them consideration during program development. Initial MACOM input will have to be developed from the October (rather than January) PBG.

(e) Status. This prescription was presented at an IPR in October 1978. The implementation of the PARR/PABE concept in CY 79 is much in line with the second alternative portion of this prescription.

(2) Problem: RDAC Review is too Late

(a) Cause. The RDAC Review is scheduled after the LOGSACS-AAO-AMP sequence. Current schedules for these processes will not allow RDAC Review to begin before late March. This means that it occurs after the Functional Review (February) and just prior to the Appropriation Review (April).

(b) Effect. The results of the RDAC Review are not available prior to the prioritization of programing issues in the Functional Review. Minimum time is available for staff analysis of

the impact of the acquisition program on other program areas prior to the Appropriation Review.

(c) Prescription. Schedule the RDAC Review prior to the Functional Review.

(d) Impact. The Army leadership will be able to consider RDAC recommendations in their determination of priorities for funding. This will insure that a comprehensive array of competing program issues is displayed for consideration in decisionmaking. See paragraph 5-3b(4) for a discussion of revision of the AMP development process which must precede RDAC Review.

(e) Status. This prescription was presented at an IPR in February 1979.

(3) Problem: There is no Centralized Control of a Total Materiel Acquisition Program. During program development, the Army leadership is not provided with a coordinated and balanced materiel acquisition plan which addresses all aspects of the matter.

(a) Cause. Materiel requirements may be satisfied by overhaul/rebuild of unserviceable assets or by procurement of new items. In order to support acquisition, funds and manpower spaces must be provided from the OMA, Procurement, and RDTE Appropriations. These appropriations are managed by different staff proponents.

(b) Effect. The lack of a balanced and well-coordinated program has resulted in funds being allocated for acquisition--whether procurement or rebuild--while a shortage of OMA manpower resources has caused backlogs to increase in procurement actions and depot maintenance. This results in a classic dilemma: HQ DARCOM personnel indicate that manpower limitations are preventing program accomplishment even though funds are available, and an OSD analyst stated that the Congress is becoming increasingly critical of DA requests for funding because of backlogs in obligation/outlay.

(c) Prescription. Assign responsibility for recommendation of a coordinated plan for total materiel acquisition.

(d) Impact. This will result in a more efficient allocation of resources through achievement of better program balance.

(e) Status. This prescription was presented at an IPR in February 1979.

5-4. BUDGETING PRESCRIPTION. During CY 78, considerable effort was devoted to establishing and maintaining a continuum from programming to budgeting at HQDA. ARSTAF programmers were intimately involved in the budget development and executive review stages of budget formulation. The need for supportive input from the field and a continuity of decisions with regards to field input to programming and budgeting was recognized, and action was directed in the form of the PARR-PABE-COB flow. The shift from programming PARR/budgeting COBE to the integrated programming/budgeting PARR-PABE-COB has caused confusion in the MACOM. The following prescription addresses this confusion.

a. Problem: The Shift from PARR/COBE to PARR/PABE/COB Confused MACOM

b. Cause. In the CY 79 programming and budgeting phases, the PARR/PABE/COB submissions are intended to improve MACOM participation by limiting the size of the PARR to a manageable number of new MACOM issues, and discouraging the introduction of new issues late in the cycle. The PABE is to address program issues developed by the ARSTAF and serve as MACOM budget estimate submissions. The COB is to refine budget estimates and submit apportionment data for the execution year from the MACOM. Despite PARR/PABE instructions, the MACOM do not understand the intent or proposed content of the three documents.

c. Effect. The MACOM intend to submit the COB similar to the CY 78 COBE.

d. Prescription. Send COB instructions to the MACOM which reinforce the intent of that document, reiterate key program/budget milestones to be met by the PARR/PABE/COB sequence, and provide a description of the DA system for program/budget development and key events. After the program/budget cycle, schedule a follow-up conference to review the system and lessons learned.

e. Impact. The prescription will facilitate achieving the intent of the PARR/PABE/COB submissions for the next cycle.

f. Status. This prescription was presented at an IPR in February 1979 and actions have been taken to clarify the CY 79 submission requirements.

5-5. PPBS PRESCRIPTIONS. The phases of PPBS described in Chapter 4 are so complex that it took over 1,500 activities to describe a single cycle, primarily at HQDA, of the planning, programming and part of the budget formulation phases. It is physically impossible to illustrate graphically anything that complex in this study

report. All the various activities can be synthesized in a "simple" graphic illustration that does provide an appreciation of the timing of each phase within a PPBS cycle and the overlapping of individual phases in a single FY. That appreciation is provided in Figure 5-5 and in particular by reading from the top to the bottom of the column designated "Present FY." In that column, there is: a single budget executed in cycle 1; a budget estimate that is prepared and defended through Congress in cycle 2 and, concurrently, another budget estimate being prepared in cycle 3; a program that is prepared and defended through OSD in cycle 3 and concurrently, the next year's program being prepared in cycle 4; a plan that is approved through the JCS in cycle 4 and, another plan prepared and submitted to the JCS in cycle 5. This simple diagram becomes complex when one is reminded of the interactivities within each phase and the interrelationships between phases. A Congressional decision in the top budget formulation phase may ripple through the decisions made in all the other phases; similarly, a decision made by OSD regarding the content of the Army program can influence issues in the planning and budgeting phases. In addition, system changes occur each time that the schedules for guidance or milestone events are changed; this happens to some extent every year. Managerial changes which redefine input requirements also occur frequently; a recent example is the change from PARR/COBE to PARR/PABE/COB. In the course of the MAKRO research, it was verified that no one ARSTAF agency was aware of the interrelationship of all the activities within PPBS. The following prescriptions focus on the need to define and document the PPBS, and to manage and control the processes in a coordinated fashion.

a. Requirement for Information

(1) Problem: The Lack of a Central Information Source that Documents PPBS Terms and Processes Creates Confusion. The complexity of the PPBS and the lack of detailed, authoritative and current documentation create a confusing situation for system participants.

(a) Cause. The PPBS is an evolving and dynamic system. No single ARSTAF section is tasked to maintain detailed and current systemic information on the Army PPBS. The documentation that is available serves to describe PPBS processes in a macro level of detail. The interrelating nature of PPBS activities causes a situation in which schedule changes in a particular process will impact on subsequent or concurrent processes. The exact nature of these impacts is not presently understood by the staff section directing the change.

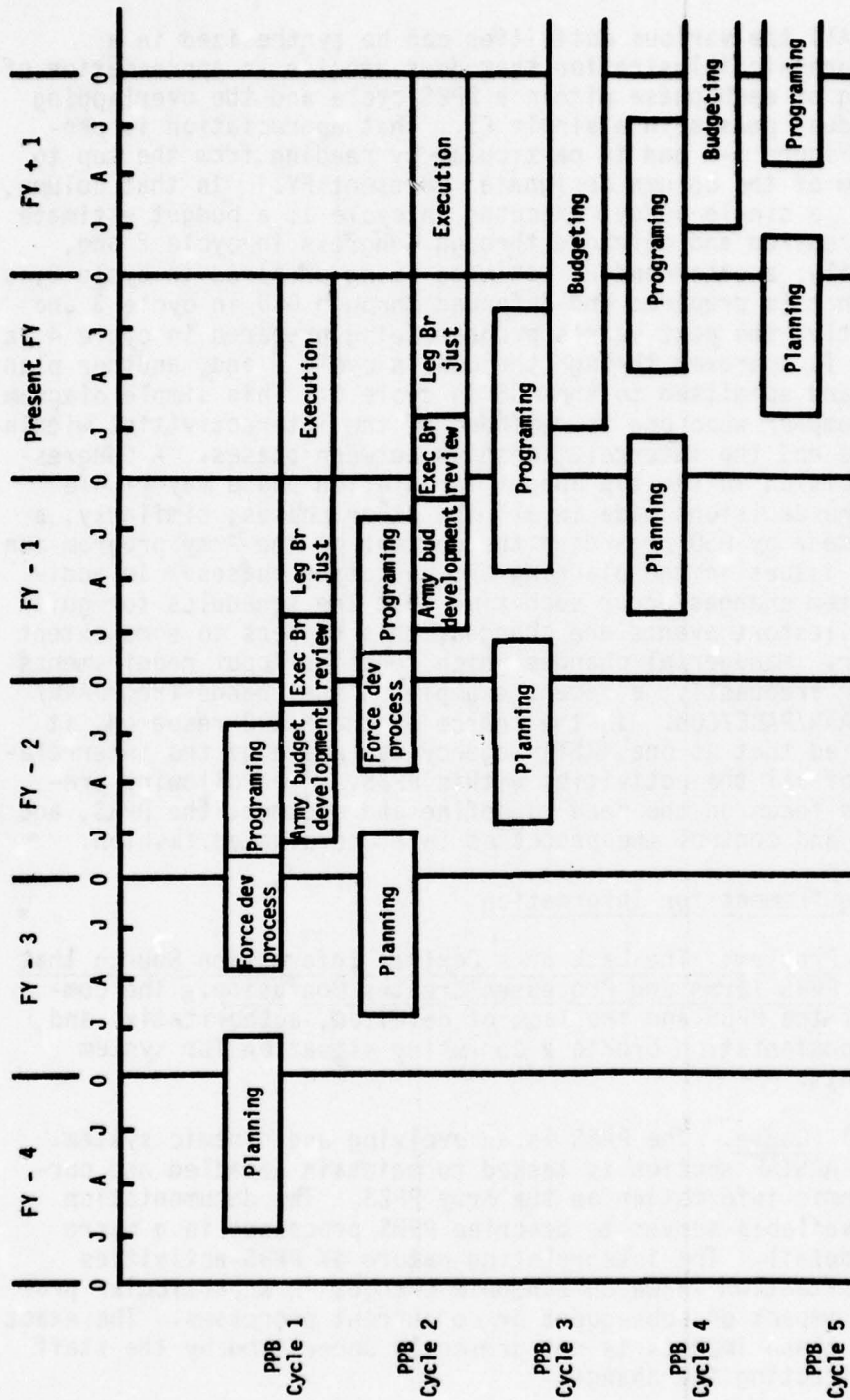


Figure 5-5. Concurrent Phases and Cycles

(b) Effect. The lack of understanding of PPBS by the participants is exemplified in the following:

1. Usage of PPBS terms is very inconsistent. The MAKRO research identified a need for a PPBS "dictionary" of common terms. Innumerable instances occurred which indicated that no universal language exists among Army PPBS participants. A common PPBS term was frequently found to have distinctly different meanings or connotations in different staff sections.

2. Schedule delays in a particular process frequently create a requirement for "crisis management" of a subsequent process. An interrelated system such as PPBS is served best by considering subsequent activities when deciding how to handle any delay that results from unexpected or unavoidable occurrences. A delayed output may often be less desirable than a modified output when fixed OSD milestones limit the time available for accomplishment of subsequent activities. Presently, a determination of how to handle schedule delays is based on a less than thorough understanding of those processes that are dependent upon the activity being delayed.

(c) Prescription. Assign responsibility for maintaining detailed and current documentation on PPBS terms and processes.

(d) Impact. A better understanding of PPBS will be possible and the system impacts of process changes can be identified. The MAKRO network diagrams could be used as a basis for describing key processes.

(e) Status. This prescription was presented at an IPR in February 1979.

(2) Problem: Participants do not Understand the System. The following prescription builds from (1) above. The complexity of PPBS creates a confusing situation for participants.

(a) Cause. As mentioned above, PPBS is an evolving and dynamic system. In the Army PPBS, there is a high rate of personnel turnover and assignment of officers to PPBS positions who have had no prior experience in PPBS. There is no program to provide incoming personnel with in-depth training in PPBS, and, as discussed previously, there is no central source of documentation that allows newly assigned personnel to follow a self-study program.

(b) Effect. There is a tremendous lack of understanding of the PPBS and its processes. Action officers, in numerous

instances, stated that the normal three-year tour of duty as a PPBS action officer results in an officer being reassigned at about the time when he has finally achieved some understanding of the system.

(c) Prescription. Institute a correspondence-type training program for newly assigned PPBS personnel which is tailored to the needs of particular PPBS agencies. A "Staff Officer's Handbook on PPBS" should be developed and up-dated annually to provide a training continuum for all personnel.

(d) Impact. Increased understanding of the PPBS will result in better analysis. The central information source prescribed previously could serve as a basis for development of training materials. A requirement for staff agencies to contribute to the training program would create a need for documentation of the agencies' PPBS involvement; this will cause internal improvements to be generated as a result of increased management understanding of the total spectrum of PPBS involvement.

(e) Status. This prescription was presented in October 1978. Since then, a PPBS Handbook has been published by PAED. The handbook should improve staff action officer understanding of the PPBS.

b. Requirement for Management

(1) Problem: There is no Central Management Office for the PPBS

(a) Cause. Within PPBS, there is no agency charged with scheduling, coordinating, and administratively controlling system activities. Staff sections are dependent upon each other in a complex series of activities. Responsibility is fragmented; control of planning, programing, and budgeting phases is divided between the DCSOPS, PAED, and COA, respectively.

(b) Effect. Delays in work activities and changes to the system cause crisis management. In such an environment, there is no schedule planning beyond reacting to the next cycle. No single office is responsible for managing the system--a major task which requires constant attention.

(c) Prescription. Assign responsibility for scheduling, coordinating, and administratively controlling the PPBS.

(d) Impact. Coordinated scheduling and centralized administrative control will instill a sense of order to the PPBS. The nature and complexity of the task will require that it be performed by an agency that is not presently involved in PPBS; responsibility for a particular PPBS process or phase would tend to preclude "honest brokerage" in administering the entire system.

(e) Status. This prescription was presented at an IPR in February 1979.

(2) Problem: There is no Stability in Key PPBS Processes. Some systemic and managerial changes can be controlled. The following addresses the problem of lack of stability.

(a) Cause. The system has three types of changes: substantive, systemic, and managerial. Systemic and managerial changes are particularly evolutionary, changing the processes and activities. These types of changes encompass terms, documents, concepts, and milestones.

(b) Effect. Some changes are not understood, causing confusion concerning the importance of the change, how it fits conceptually into the system, and when it is needed. Because of this, staff sections are unable to develop and rely upon milestone schedules.

(c) Prescription. Stabilize the system for one year by allowing limited systemic and managerial changes. Notify all ARSTAF and MACOM participants of key processes, milestones, and participant input requirements to those processes.

(d) Impact. An opportunity is created for effective participation, and participants gain an understanding of their contribution to the system the following year.

(e) Status. This prescription was presented at an IPR in February 1979.

5-6. SUMMARY. As an aid in assimilating the problems and associated prescriptions described above, summaries of each are provided in Tables 5-1 through 5-17. The tables, arranged in the same sequence as the discussion, indicate in abbreviated form the problem, its cause and effect, the prescription, and the probable impact of the prescription.

Table 5-1. Planning Prescription #1

Problem: Army planning activities must change			Impact of prescription
Cause	Effect	Prescription	
-- Army milestones tied to JSPS	-- JSPDSA I <ul style="list-style-type: none"> • Completed four months earlier • Compressed two months 	-- Revise milestones to ARSTAF <ul style="list-style-type: none"> • JSPDSA I by 15 Mar • Force analyses by 1 Jun • JSPDSA II start 1 Jun 	-- Reasonable basis to plan work schedules
-- JSPS milestones change to: <ul style="list-style-type: none"> • JSPDSA I by 15 Mar • JSPD 60 days prior to draft CG 	-- Force analyses <ul style="list-style-type: none"> • Shifted six weeks • No compression 		-- No compression of force analyses
-- Draft CG anticipated in Jan	-- JSPDSA II <ul style="list-style-type: none"> • Start six weeks earlier 	-- Alert CINCs: <ul style="list-style-type: none"> Input by 1 Jun 	-- Slack time for corrigenda staffing
	-- JSPD <ul style="list-style-type: none"> • Start two weeks earlier • Compressed one month • Completed by Sep/Oct 		

Notes: (1) Status - Proposed at IPR in Oct 78. Work schedules for force analyses have been published based on the projection.

(2) For narrative description see paragraph 5-2a.

Table 5-2. Planning Prescription #2

Problem: Guidance for program development is not synchronized with planning force development			Impact of prescription
Cause	Effect	Prescription	
-- Planning force analysis available in Jul 78	-- Program force development based on planning force analyzed a year prior	-- Use planning force of Jun 79 for program force development guidance in same year	-- Takes advantage of JSPD milestone changes
-- Planning force modified for input to program force development	-- Anticipated milestone change causes planning force availability Jun 79		-- Planning force and program force in same cycle
-- Program force development begins Jun 79			
-- JSPD milestone changes cause planning force analysis shift.			

Notes: (1) Status - Proposed at IPR in Oct 78.

(2) For narrative description see paragraph 5-2b.

Table 5-3. Program Prescription #1

Problem: There is confusion during program development regarding Core program			Impact of prescription
Cause	Effect	Prescription	
-- Core concept used for first time in CY 78	-- Staff unable to establish composition of Core after CDDP	-- Develop CDDP through coordinated staff effort	-- Start of program development clearly identified and understood
-- ZBP developed from Core	-- PDIP development handi-		-- Additional staff coordination required
• CDDP used to reach Core by decrementing FYDP	• capped		
• CDDP designated by PAED	• Used to build program from Core		

Notes: (1) Status - Proposed at IPR in Oct 78. Implemented in FY 81-85 POM development.

(2) For narrative description see paragraph 5-3a(1).

Table 5-4. Programing Prescription #2

Problem: Program analysts are not aware of current versions of PDIP			Impact of prescription
Cause	Effect	Prescription	
-- No formal procedures for control of PDIP revisions	-- Admin handling and processing was cumbersome	-- Establish a central control coordinator for all PDIP	-- Dissemination of PDIP info enhanced
-- Over 200 PDIP with more than 1000 revisions in an eight week period	-- Staff programmers not assured of current data	-- Limit frequency of revisions (e.g., weekly: in to PAED by Tuesday complete listing out by Thursday)	-- Data base for analysis stable from week to week
<p>Notes: (1) Status - Proposed at IPR in Oct 78. Implemented in part, frequency of revisions still not limited.</p> <p>(2) For narrative description see paragraph 5-3a(2).</p>			

Table 5-5. Programing Prescription #3

Problem: It is not possible to crosswalk readily between PIN and PDIP			Impact of prescription
Cause	Effect	Prescription	
-- MACOM PIN received after PDIP formulation	-- MACOM unable to track issues	-- Develop a common procedure for program issues	-- Tracking of issues facilitated
-- ARSTAF incorporated PIN into existing PDIP		-- Promulgate through PAPPGM	-- Implications of resource decisions readily identifiable to MACOM
-- No procedure existed to identify PIN in PDIP			

Notes: (1) Status - Proposed at IPR in Oct 78. Implemented in FY 81-85 program development.

(2) For narrative description see paragraph 5-3a(3).

Table 5-6. Programing Prescription #4

Problem: Considerable effort is expended preparing for/participating in briefings			Impact of prescription
Cause	Effect	Prescription	
<ul style="list-style-type: none"> -- Five leadership briefings: Draft PAPPGM, PAPPGM, CG, Functional and Appropriation reviews -- For each briefing: 7-12 work days -- Revisions at each level prior to next briefing 	<ul style="list-style-type: none"> -- Briefings took approximately 40% of work days (Oct-Apr) -- Iterative modification of program 	<ul style="list-style-type: none"> -- Eliminate leadership briefing for Draft PAPPGM or PAPPGM (reduce from two) -- Combine briefings SELCOM/CSA/SA level -- Defer incorporating changes until review process complete 	<ul style="list-style-type: none"> -- More time available for program analysis -- Promotes participatory management by CSA/SA -- Disagreements over program brought to leadership
Notes: (1) Status - Proposed at IPR in Oct 78. (2) For narrative description see paragraph 5-3b(1).			

Table 5-7. Programing Prescription #5

Problem: PARR documents are too lengthy for detailed analysis			Impact of prescription
Cause	Effect	Prescription	
-- PAPPGM & ARSTAF tasked MACOM for many details	-- Significant portion of PARR provided details for DA issues (not related to MACOM PIN)	-- Require staff to acquire data through normal channels	-- PARR would highlight <u>major</u> MACOM requirements
-- Resource limits for PIN ignored by MACOM	-- Significant portion of PIN exceeded fiscal constraints	-- Stress fiscal constraints to limit PIN	-- ARSTAF acquisition of data accomplished separately, as required
		-- Reorient PARR to identify MACOM program issues	

Notes: (1) Status - Proposed at IPR in Oct 78. Implemented in CY 79.

(2) For narrative description see paragraph 5-3b(2).

Table 5-8. Programming Prescription #6

Problem: LOGSACS data is not available soon enough			Impact of prescription
Cause	Effect	Prescription	
-- Procurement program developed through sequential processes: LOGSACS, AAO, AMP, RDAC Review -- LOGSACS takes 6 weeks (15 Oct - 1 Dec) -- LOGSACS revised at least 3 times before 1 Dec release	-- AAO computation can not begin until 1 Dec	-- Release LOGSACS for AAO computation earlier (after 1st revision)	-- AAO computations can begin earlier (2½ weeks)
		-- Forward any significant changes later	

Notes: (1) Status - Proposed at IPR in Feb 79.

(2) For narrative description see paragraph 5-3b(3).

Table 5-9. Programing Prescription #7

Problem: AMP is not available soon enough			Impact of prescription
Cause	Effect	Prescription	
-- AMP development takes over 3 months	-- AMP not available until mid-March	-- Allow one revision after final DARCOM AMP • Reduce by 3 iterations	-- Reduce amount of time required to produce AMP by 3 weeks
-- AMP revised 4 times after final DARCOM submit	-- Subsequent RDAC not completed until early April		-- Added to previous proposal on LOGSACS, allows RDAC Review to begin almost 6 weeks earlier
			-- Possible loss in degree of accuracy for procurement program

Notes: (1) Status - Proposed at IPR in Feb 79.

(2) For narrative description see paragraph 5-3b(4).

Table 5-10. Programming Prescription #8

Problem: PARR documents are received too late in program development process			Impact of prescription
Cause	Effect	Prescription	
-- PDIP prepared 17 Feb - 3 Mar 78	-- PARR received just prior to Functional Review	-- Schedule PARR submission earlier (4 weeks prior to Functional Review)	-- MACOM positions considered in program development
-- Functional Review of PDIP began 7 Mar 78	-- Tremendous workload at MACOM with minor impact at DA	-- Approach options <ul style="list-style-type: none"> • Single PARR, earlier • Preliminary/final PARR 	-- MACOM input will not be based on Jan PBG
-- PARR document suspense 27 Feb 78			
Notes: (1) Status - Proposed at IPR in Oct 78. Implemented in CY 79. (2) For narrative description see paragraph 5-3c(1).			

Table 5-11. Programing Prescription #9

Problem: RDAC Review is too late			Impact of prescription
Cause	Effect	Prescription	
-- RDAC scheduled at completion of sequential processes: LOGSACS, AAO, AMP	-- Functional Review not provided RDAC input on acquisition strategy	-- Schedule RDAC prior to Functional Review	-- Provide Army Leadership a total picture during key review process
-- Functional Review scheduled to start mid-Feb	-- RDAC results avail <u>just</u> prior to Appn Review • Little time available to analyze acquisition impact on other programs		-- Requires some revision in AMP process (see Programing Prescription #7)
-- RDAC scheduled to start late Mar			
-- Appropriation Review scheduled to start early Apr			

Notes: (1) Status - Proposed at IPR in Feb 79.

(2) For narrative description see paragraph 5-3c(2).

Table 5-12. Programing Prescription #10

Problem: There is no centralized control of a total materiel acquisition program			Impact of prescription
Cause	Effect	Prescription	
-- Total materiel acquisition program is function of overhaul/rebuild and procurement -- Different staff proponents responsible for interrelated facets of problem: OMA funds, OMA spaces, Procurement funds and ROTE funds	-- No assurance of coordinated materiel acquisition program	-- Assign responsibility for recommending a total acquisition program	-- Greater efficiency in allocation of resources
	-- Cuts in one area affect ability to accomplish programs in another		-- Better program balance

Notes: (1) Status - Proposed at IPR in Feb 79.

(2) For narrative description see paragraph 5-3c(3).

Table 5-13. Budgeting Prescription

Problem: The shift from PARR/COBE to PARR/PABE/COB confused MACOM			Impact of prescription
Cause	Effect	Prescription	
-- Content not understood • PABE: FY 81 budget estimate • COB: FY 81 refine, FY 80 apportion -- Intent of PABE/COB not understood • To discourage new issues late in cycle • To reduce volume of PARR input	-- MACOM preparing COB similar to COBE	-- Reinforce instructions on COB <ul style="list-style-type: none"> • Reiterate key program and budget milestones • Provide description of DA system and key events -- Schedule follow up conference after first PARR/PABE/COB cycle to review experience	-- Facilitate achieving intent of PARR/PABE/COB

Notes: (1) Status - Proposed at IPR in Feb 79. Implemented.

(2) For narrative description see paragraph 5-4.

Table 5-14. PPBS Prescription #1

Problem: The lack of a central information source that documents PPBS terms and processes creates confusion			Impact of prescription
Cause	Effect	Prescription	
-- System is evolving and dynamic	-- No common PPBS language	-- Assign responsibility for maintaining PPBS documentation <ul style="list-style-type: none"> • Detailed • Current 	-- Better understanding
-- No source for detailed and current documentation	-- No consideration of the system impact of schedule delays		-- Effective management of change enhanced
-- PPBS activities are interrelated			-- MAKRO network diagrams provide descriptive base

Notes: (1) Status - Proposed at IPR in Feb 79.

(2) For narrative description see paragraph 5-5a(1).

Table 5-15. PPBS Prescription #2

Problem: Participants do not understand the system			Impact of prescription
Cause	Effect	Prescription	
-- System is evolving and dynamic	-- Lack of detailed understanding of PPBS	-- Institute training program for new personnel <ul style="list-style-type: none"> • Correspondence-type • Tailored to needs 	-- Increased understanding promotes better analysis
-- High rate of Army personnel turnover <ul style="list-style-type: none"> • Most new personnel have no prior PPBS experience 	-- Personnel transfer after 3-4 years experience	-- Develop a handbook to provide a training continuum for all personnel	-- Central information source provides a training base (see PPBS Prescription #1)
-- No PPBS training program for new personnel			-- Agency involvement will promote organizational effectiveness analysis

Notes: (1) Status - Proposed at IPR in Oct 78. Implemented in part; a handbook has been published.

(2) For narrative description see paragraph 5-5a(2).

Table 5-16. PPBS Prescription #3

Problem: There is no central management office for the PPBS			Impact of prescription
Cause	Effect	Prescription	
-- Staff sections dependent upon one another	-- Delay/change cause crisis management	-- Assign centralized responsibility for PPBS <ul style="list-style-type: none"> • Scheduling • Coordinating • Administratively controlling 	-- Instill a sense of order to PPBS
-- Responsibility for planning, programming, budgeting divided among three staff sections	-- Scheduling is very reactive		-- Promote overall efficiency
			-- Constant staff attention required

Notes: (1) Status - Proposed at IPR in Feb 79.

(2) For narrative description see paragraph 5-5b(1).

Table 5-17. PPBS Prescription #4

Problem: There is no stability in key PPBS processes			Impact of prescription
Cause	Effect	Prescription	
-- System evolutionary and reactionary -- Terms/documents/concepts change continually	-- Confusion; do not understand: <ul style="list-style-type: none"> • What is important • How it will be used • When it is needed 	-- Stabilize for one year; limited changes	-- Opportunity for more effective participation -- Understanding of contribution
	-- Inefficiency: unable to rely on schedules	-- Notify ARSTAF and MACOM of key events/milestones/inputs	

Notes: (1) Status - Proposed at IPR in Feb 79.

(2) For narrative description see paragraph 5-5b(2).

CHAPTER 6

ALTERNATIVES

6-1. INTRODUCTION OF REQUIREMENT. The tasking directed that the MAKRO Study formulate alternative measures for improving the sequence of activities and the distribution of available time for analysis in the preparation of PPBS documents. In the MAKRO Study, alternative measures were defined as scheduling alternatives that resulted from the analysis of the sequence and the schedule of the activities. The scheduling alternatives were of two types: intra-PPBS phase and inter-PPBS phase. The intra-PPBS phase scheduling alternatives addressed time delays and disconnects within a single phase of PPBS. These alternatives were developed in the analyses of the separate phases and were discussed in Chapter 5. The formulation of inter-PPBS scheduling alternatives considered changes that affect more than one phase of the PPBS. The inter-PPBS phase analysis is discussed in this chapter.

a. Preparatory Analysis. The MAKRO inter-PPBS phase analysis was dependent upon developing a reasonably thorough knowledge of the activities and processes that compose the existing phases of Army PPBS and a clear understanding of the objectives of each PPBS phase. In order to gain that knowledge of the phases, a significant portion of the MAKRO analysis was spent identifying and analyzing thousands of individual activities that occur within the PPBS. The individuals responsible for accomplishing the activities were interviewed to gain an understanding of their participation. Another significant portion of the MAKRO study effort was spent identifying, analyzing, and preparing the descriptive network diagrams that model the activities and interactions of the phases (see Appendix E). Each activity was investigated to determine the time used to accomplish the activity.

(1) The changing nature of the activities made it impossible to get the responsible agencies to estimate the most likely time required to perform the work. The time required to perform the activities compressed or expanded to fit the directed milestone suspenses. The office performing the activity used as many people and as many overtime hours as necessary to meet the suspense with the best product possible.

(2) The large number of activities and the dynamic, continually changing nature of schedules required that the MAKRO Study establish a computer-based graphics capability to generate and maintain current network diagram models.

(3) The formulation of the models required a rigorous, systematic analysis of the activities within a phase and those that linked the phases together. The inter-PPBS phase analysis proceeded as described in paragraph 6-2 below.

b. Limitations. Several limitations that affected how the scheduling analysis proceeded were recognized in the preparatory analysis.

(1) No comprehensive list of the processes that the Army accomplishes in each phase of PPBS was available during the preparatory analysis.

(2) Army PPBS processes and schedules had to respond to and support definite, prescribed milestone dates.

(3) Virtually no slack time was identified between the process schedules and the prescribed milestones.

(4) Virtually no slack time was identified between the activities within the processes--the time for the activities expands or contracts in response to prescribed milestones.

(5) No workload or most likely time data were available for measuring the level of effort associated with the activities. The best estimate of activity time that could be generated between the action officers and the MAKRO analysts was the time available from the receipt of a requirement to the forwarding of a response.

6-2. THE BASE CASE: CY 78 EXPERIENCE. The preparation and subsequent evaluation of inter-PPBS phase scheduling alternatives proceeded from an analysis of a base case. The MAKRO base case was the CY 78 system and its associated schedule. The base case includes the linkages between the individual phases, thereby permitting a simulation of the interrelationship between all of the activities. The actual quantity of activities in the CY 78 base case--approximately 1,500--was too great to consolidate into a single understandable descriptive network diagram. The consolidation of all the activities in a single diagram was not essential to the scheduling analysis. The level of resolution in the base case needed only to be great enough that it permitted the identification of how a change would impact on all interrelated supporting networks in each phase.

a. Assumptions. The assumptions imposed by the tasking directive were particularly critical in the formulation of alternatives to the base case. The assumptions are discussed below, and the specific impacts of the assumptions are discussed in paragraph b, The Base Case Formulation, below.

(1) On Administrative Staff. Administrative staffs will not be augmented with additional personnel to process resource justification documents. The importance of this assumption is that the alternatives are constrained to those which can be implemented without the need for additional personnel.

(2) On JCS, DOD, OMB, and Congressional Milestones. Milestones established by headquarters higher than HQDA cannot be altered to accommodate the Army PPBS. The alternatives have to address how best to fit the Army activities into higher headquarters' milestones.

(3) On Priority of Activities. All Army PPBS activities do not require the same priority of compliance. The alternatives can suggest changes to the sequencing and scheduling of activities based on priorities identified by the MAKRO analysis.

b. The Base Case Formulation. Three essential elements were required to formulate the MAKRO base case: (1) the identification of the transition activities that link the phases together; (2) the identification of key events and milestones prescribed by headquarters higher than HQDA; and (3) the identification of the key Army activities that support the prescribed events and milestones. The identification of all three elements was inherent in the data collected for formulating the individual network diagrams. However, the second assumption and the impact of the data limitations, particularly the lack of slack time (see 6-1b, above), on the third assumption combined to produce a base case model with no objective means of formulating alternative sequencing of Army activities and processes. The sequencing of Army processes is complementary to, and all the activities are essential for, supporting the higher headquarters' milestones.

(1) Inter-PPBS Phase Transition Activities. The transition activities that link the phases together were systematically identified and verified during the development of the various descriptive network diagrams. The transition activities were checked with both the predecessor and successor organizations. The transition activities were used to identify how some 1,500 activities associated with PPBS in CY 78 were linked into a system.

(2) Prescribed Events and Milestones. The second assumption of the tasking stipulated that milestones established by headquarters higher than the HQDA would remain unchanged by MAKRO alternatives. Those events and milestones were identified in the base case model as fixed points about which alternatives would have to be structured. Both the frequency and quantity of those events and milestones greatly reduced the flexibility for changing Army schedules.

(3) Key Army Activities and Processes. The designation of key Army activities and processes was required in order to establish a hierarchy for the processes. Once a hierarchy was established, the third assumption of the tasking directive granted the study the license to redistribute processes based on contributions to the PPBS. The actual establishment of a hierarchy was impossible since the processes were all of critical importance. All of the processes were required, as scheduled, to support prescribed milestones. All of the activities were identified as critical for generating the type, quality, quantity, and timely information required in the processes. Between activities and processes, virtually no slack time (extra time) was identified. What is accomplished now requires virtually all the normal worktime available and near continuous overtime during peak periods just to meet current milestones.

c. Observations on Base Case. In the base case, the Army reacts to higher headquarters' milestones; the frequency of the milestones requires a high degree of interaction. Figure 6-1 illustrates this point; the interactions are described in paragraph 3-3a. The high degree of interaction necessitates a very intense Army system to generate responses by prescribed milestones. The Army procedures for generating the justification documentation require nearly continuous production at surge capacity. This environment is not conducive to deliberate analyses. The MAKRO analysis did not identify periods of low activity that could be used for candidate scheduling alternatives between phases. As a result of the analysis, at least two independent, yet complementary, alternatives are suggested for the Army to pursue in order to improve the time available for ARSTAF analysis.

(1) The Army should seek a systemic change to DOD PPBS milestones. The Army can explain that the current schedule is chaotic and that the current environment is not conducive to deliberate analysis. In the programing phase, the plethora of intermediate DOD milestones between the first guidance (draft CG) and the final response (APDM) operates against having time available for analysis. Programing is followed by budget development in which the same five years of resource data are reviewed any number of times in the DPS. Analysis is required and time must be made available. A good set of guidance should be provided for a thorough, well coordinated analysis. The current style of decisionmaking as a result of numerous reactions to changing guidance should be replaced by decisionmaking supported by more rigorous analytical submissions. The Army should petition the SECDEF to eliminate some of the intermediate responses in the programing phase.

Dec Jan Feb Mar Apr May

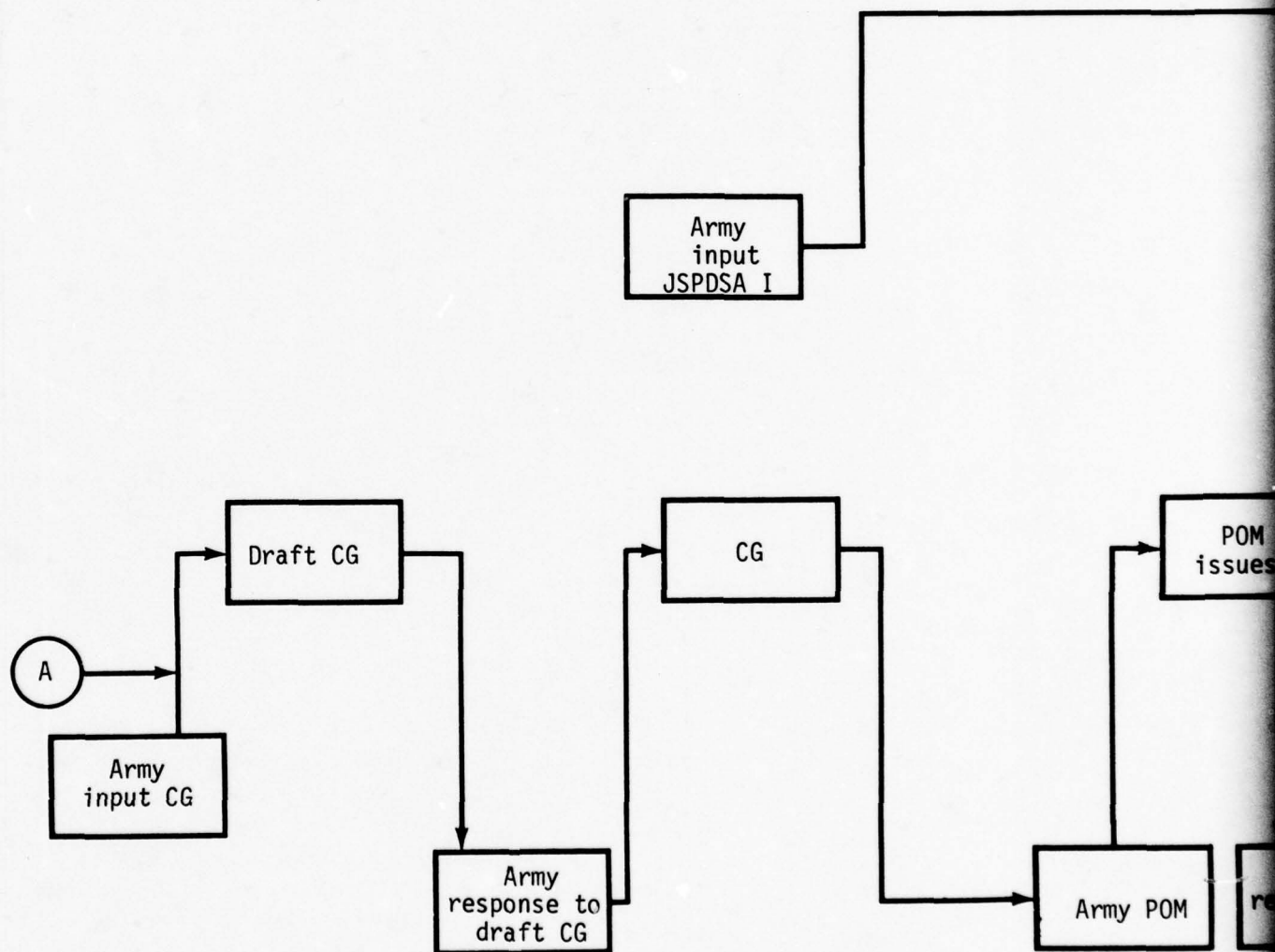


Figure 6-1. Army to Hi

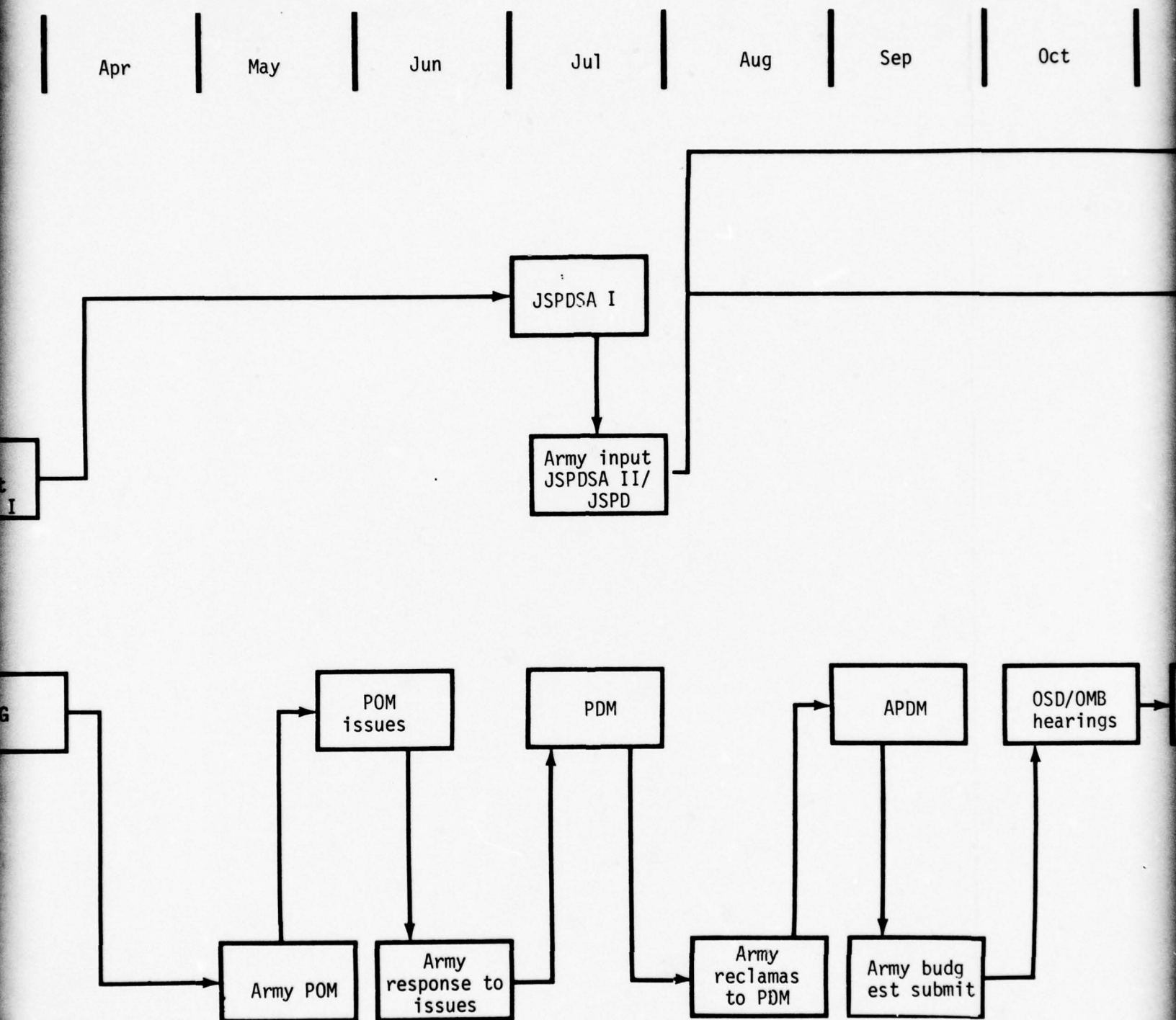
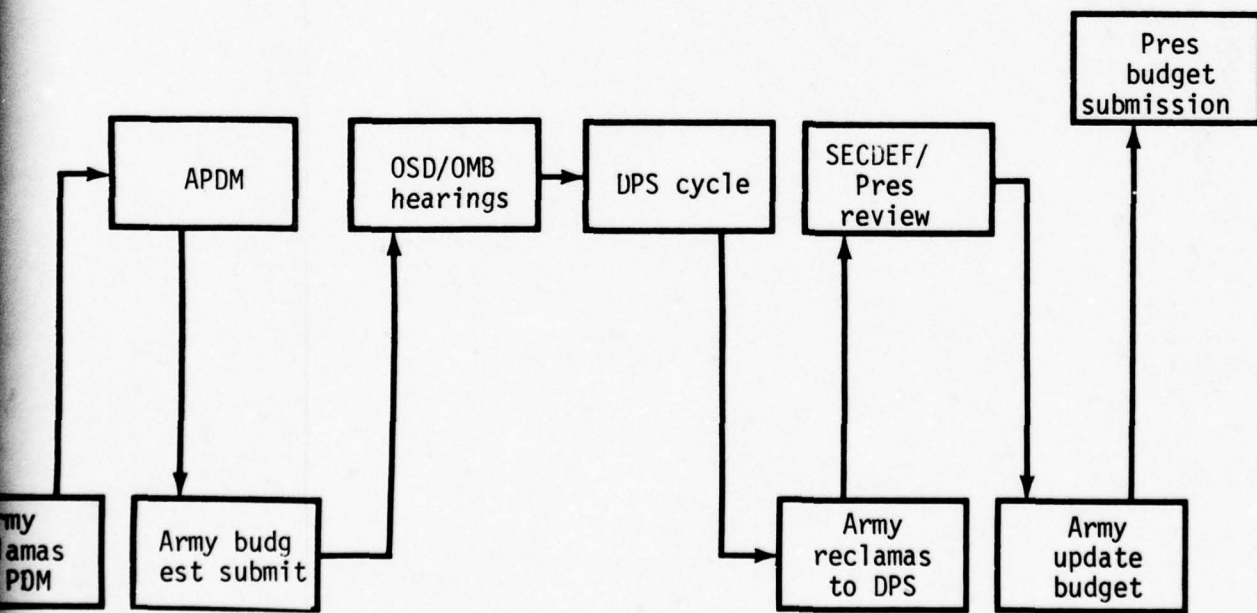
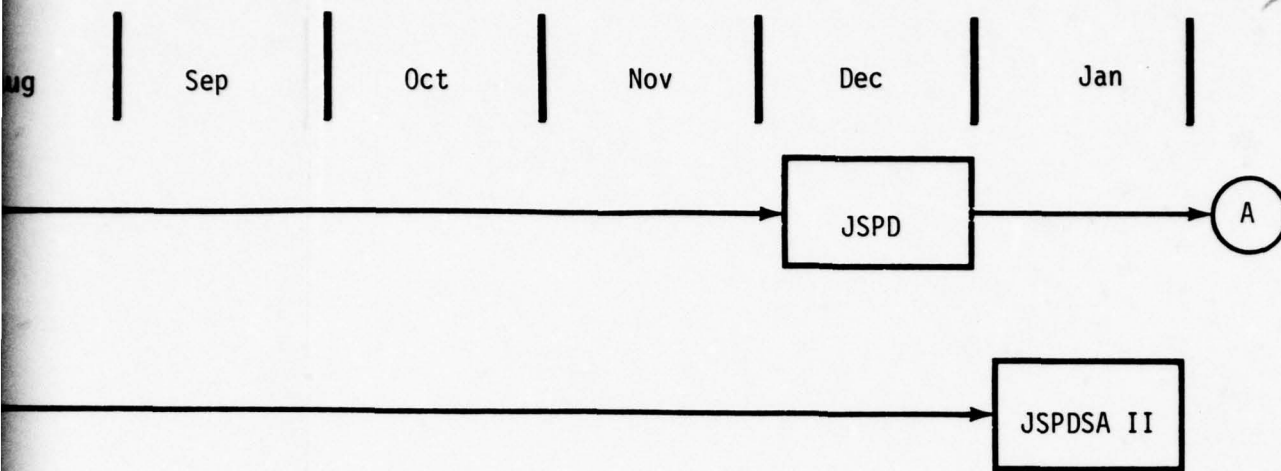


Figure 6-1. Army to Higher Authority Interchange, CY 78 Experience

3



Exchange, CY 78 Experience

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(2) In another manner, Army managers at all levels can use the MAKRO network diagrams to help improve management of PPBS. MAKRO diagrams identify systemically the activities currently performed. Managers experiencing difficulties or intent upon improving a facet of PPBS can use the diagrams to relate the current activities to the broader PPBS. An intense management analysis effort can proceed from the specific objectives and outputs of selected activities to the objectives and input requirements of successor activities. If differences are identified, either elimination of excessive output can be directed, or preparation of additional input can be required. The MAKRO Study analyzed a substantive inter-PPBS phase issue with the aid of the diagrams; the issue was to determine means to insure that Army planning is reflected in Army programing and budgeting. The next paragraph addresses that analysis.

6-3. REFLECTING PLANNING IN THE PROGRAM. The most important way in which senior management can contribute to improving the Army is by systematically planning for improvements and then managing that plan. The AR 1-1 describes an Army Planning, Programing and Budgeting System for resource management. The regulation implies that the force requirements identified in planning can serve as a basis for programing and budgeting, and reciprocally, that programing and budgeting address the force requirement developed in planning. In practice, however, the planning force requirement is too large and not detailed enough for programing and necessitates redefining a program force. The program force, although more suitable for program development, is not the force developed by planning. The implied link between the planning and programing phases envisioned by AR 1-1 was not observed in the MAKRO research. This situation and potential improvements are discussed below.

a. Planning is More than Army Planning. As originally envisioned by SECDEF McNamara, PPBS was to be a systematic management process for decisionmaking. At the time PPBS was initiated, comprehensive military force requirements were developed in the JSOP for 10 years into the future; but those requirements greatly exceeded resource levels likely to be available in the budget. PPBS was to merge planning and budgeting and address where and how to go from the present to the future; the system implied that planning would serve as a basis for programing and budgeting. However, in the 17 years following the inception of PPBS, planning has not moved any closer toward programing and budgeting than when the system was initiated. Today, planning force requirements for 10 years into the future still exceed the expected resource levels.

(1) Army Planning. Portions of the Army are designed in a JCS coordinated effort with the other Services that exhibit a force capability to attain national security objectives. The focus of the design is a force available to counter a threat anticipated in 10 years; the design assumes: (a) the force has a reasonable assurance of countering the threat; (b) the force can and will be developed over the next 10 years. The first assumption deals with risk and is always subject to question. The second assumption addresses the national capacity and resolve to produce the force over 10 years. This assumption is so broad that a detailed allocation of resources for specific issues is never developed. Complementary plans are not developed for resource sensitive issues, such as: recruiting and training of manpower; materiel modernization; upgrading, opening, closing of facilities. Since these issues are not addressed in planning, Army programing must develop them independently. In summary, Army planning is not detailed enough to be of direct use to Army programing.

(2) Army Programing. Army programs are developed in response to detailed OSD guidance. The programing response to this guidance involves balancing such issues as forces, recruiting, training, materiel modernization, and facilities within prescribed manpower and fiscal ceilings for each of five years. Recall from the previous paragraph that the product of Army planning does not address these resource sensitive issues. The Army program is in fact the Army plan because it formulates the detailed methods for accomplishing objectives. However, this de facto plan is not that envisioned by AR 1-1 because it does not address a 10-year future nor the objectives identified in planning. The resultant force capability is constrained because it conforms to OSD guidance.

b. Programing Requires Detailed Objectives from Planning. The Army program represents the corporate plan of the Army because it allocates resources to accomplish detailed objectives over time. However, the detailed objectives were developed independently of Army planning and in the programing phase. Army planning needs to be the basis for the Army program and ultimately the budget justified to the President and Congress. The following discussion suggests the formulation of a method for Army planning to be reflected in Army programing through specific Army objectives. These objectives must be in enough detail to address crucial resource sensitive issues. Planning should generate the detailed programing objectives to insure that the programing objectives complement the national security objectives. The method should take advantage of existing processes that are related in the planning and programing phases. A review of AR 1-1 and the analysis in MAKRO verified that both the planning and programing objectives can be related in the force development process.

c. The Force Development Process Should Provide Detailed Objectives. The force development process serves as a foundation for both planning and programing. The scope of the force development process should be broadened to encompass a methodology for generating detailed Army objectives. The 10-year planning force should be developed in sufficient detail to be used for the development of the 5 year program. The force development process is discussed in Appendix D.

(1) Orientation and Time Focus of Planning and Program Forces. The current orientation and time focus of the planning and program forces differ. The planning force generated represents a capability requirement to be developed over 10 years that can attain the national security objectives. The program force is generated by allocating resources over 5 years and should allow the Army to retain as much of the planning force capability as possible (Figure 6-2). The orientation should be the same, a 10-year period, with the common goal of attaining the national security objectives. The annual change schedules for improvements to the two force levels will differ since the program force is constrained for the first 5 years within OSD specified resource levels and the projection to the 10th year should remain fiscally responsible at a projected OSD resource level. Figure 6-3 illustrates (not quantitatively based) the two change schedules and their differences. The difference in any year addresses both capability and risk.

(2) Crosswalks Between Planning and Program Forces. Currently, there are crosswalks between the planning and program forces. These crosswalks are common areas of consideration in developing the two forces and include such things as: force planning guidance, Required Delivery Dates (RDD), capability trade-offs and assumptions. These crosswalks tend to link the forces; that is, the crosswalks are the issues decremented from the planning force to estimate the program force. In Figure 6-4, as each consideration is applied to the planning force, the capability of the force decreases until it approaches OSD specified resource levels at the program force line. The assumptions that all the other non-force resources will be available must be addressed eventually in programing and are particularly critical. These assumptions are the crucial resource sensitive issues which are discussed in paragraph a above and currently go unaddressed in planning. As an alternative to the current situation, planning could broaden its current perspective and address these assumptions in order to provide guidance that programing can use in the analysis of the best application of resources. The guidance should seek to retain as much capability of the planning force as possible.

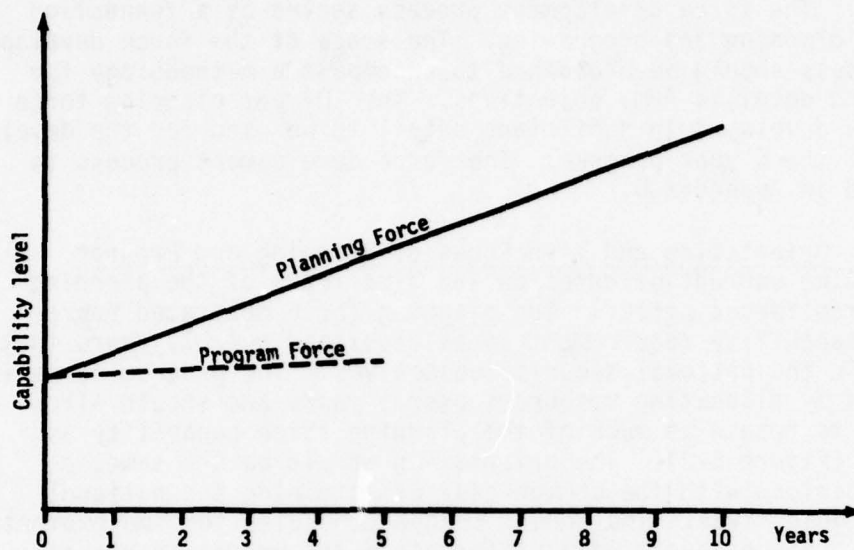


Figure 6-2. Orientation and Time Focus Differences

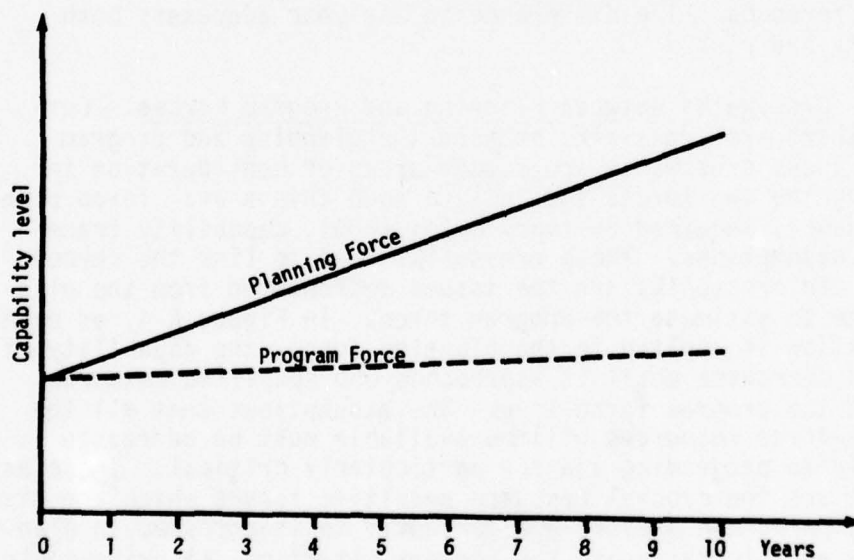


Figure 6-3. The 10 Year Program Force

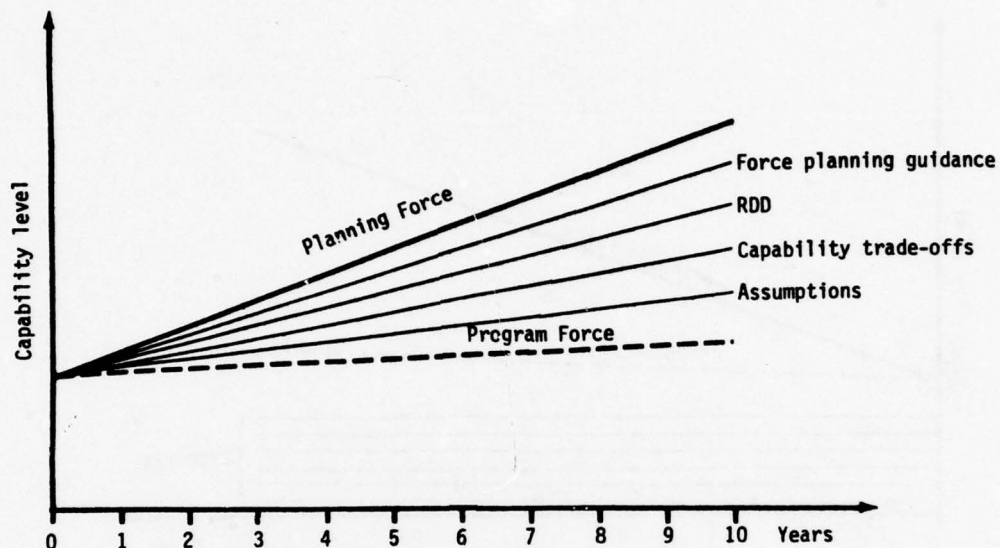


Figure 6-4. Decrementing the Planning Force

(3) The Need for a Core Force. The POM development process proceeds from the core program at least as much as from the program force. (In Chapter 4, paragraph 4-3b, the development of the core program is discussed.) The core program is established by decrementing the October FYDP; this is accomplished by removing resource issues of least priority. A force capability is inherent in the FYDP. Figure 6-5 reflects that the program force should be related to program elements of the FYDP so that resource issues deleted to identify the core can be related to capability. However, the resource issues are not related to capability. POM development, therefore, begins from two capability levels; the core capability inherent from the decremented FYDP and the known capability of the program force. There should be a core force which is completely described in terms of both structure (capability) and crucial resource sensitive issues (some form of the current program elements). This requires a single common Army planning and programming language that relates force capability and resource allocation issues. This new language should be developed to complement the OSD FYDP, where possible, to ease the transformation from the Army terms to OSD FYDP PE.

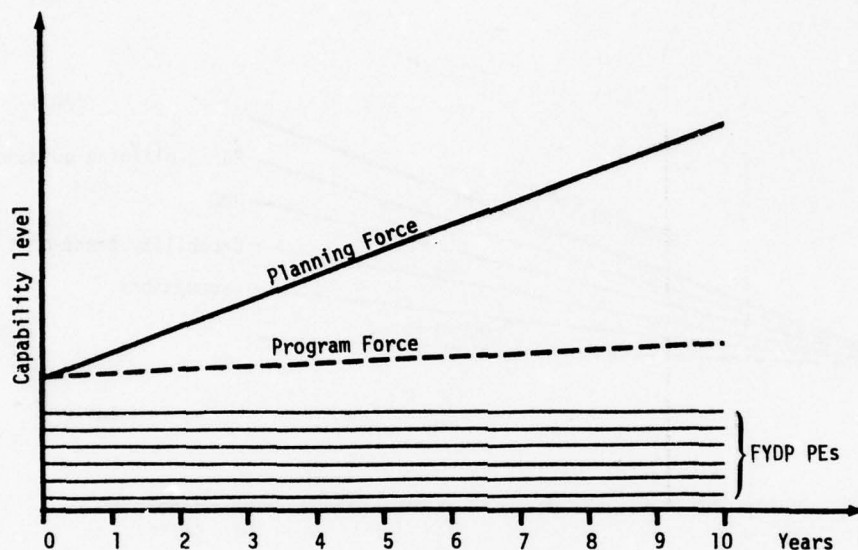


Figure 6-5. Building the Core Program

(4) Planning to Programing Transition. Once capability implications of resource issues are known, detailed objectives can be formulated. The change schedule of the planning force is key to determining the detailed Army objectives. The change schedule assumes that annual force growth milestones would be met each year of the mid-range period. The force growth inherent in the milestones must be analyzed to determine the nature, composition, and contribution of the growth in the total Army, that is force and non-force capabilities. The results of this analysis would provide a basis for articulating the detailed objectives the Army desires to attain at each year for the next 10 years. A combination of the force growth annual objectives and the resource sensitive issues would provide a framework for developing detailed guidance to programing. Once the CG manpower and fiscal ceilings are announced, the effect on annual objectives and the impact on attaining the national security objectives at the end of 10 years could be studied. There will be a difference. The difference could be articulated in terms of risk (the difference) and the objectives the total Army can achieve within projected resources. The analysis would provide an analytic basis for justifying the Army POM in terms of capability, roles and missions.

d. What Needs to Change?. The alternative described in this chapter would reorient current Army processes to develop detailed Army objectives over 10 years and a complementary core force structure that is sensitive to reasonable resource availability. The Army needs a plan for guiding the programing of resources. This requires a detailed exposition of the Army's current and projected capability requirements. Since the projected capability requirements may never be attained due to resource limitations, there is a need to know the details of the capability toward which programing should strive.

(1) Capability is not an easily quantifiable concept, yet the Army should justify its needs for resources in terms of capability. In planning, a required capability level is developed in terms of force structure. For programing, the concept of capability has to be expanded to include force structure and all the non-force issues that are resource sensitive. No link exists between the force capability of planning and the expanded contributors to capability in programing; these need to be developed.

(2) The discussion in subparagraph c, above, indicates that processes already exist to develop a planning to programing continuum. These processes need to be reoriented and a common language needs to be developed to facilitate the information flow between them. This could be accomplished by adding a second stage to current Army planning.

(a) The first stage of planning should be the current planning processes. The Army needs to know what force is required to attain the national security objectives. The Army participation in the current JSPD development process serves this purpose.

(b) The second stage of the planning phase would center around the current program force development process. Rather than the process proceeding within the program phase, it should proceed in the planning phase with certain changes in the nature of the analysis. The analysis should be expanded by ARSTAF interaction to develop detailed annual Army objectives over 10 years and the force and non-force resource sensitive issues associated with attaining the objectives. The output of this stage should be a 10-year core force structure, the non-force complements of that structure, and a capability assessment of the combination.

(3) The language and details of the core force structure should be common to planning and programing. During the POM development process, additional capability could be added to the core force from both force and non-force related resource sensitive issues. The sum would be an Army program developed around a plan to enhance the Army's capability of attaining the national security objectives.

e. The Impact of a Change. An assumption of the MAKRO Study was that administrative staffs would not be increased. On the surface, it might appear that the suggestion for change would require an increase to the ARSTAF; however, much of the activities described above go on now. The increase in planning activities would probably be compensated by reduced programing workload.

6-4. SUMMARY. The MAKRO Study presented two alternatives which singly or together could enhance the quality of analysis supporting Army PPBS.

- Seek relief from the highly interactive/reactive dialogue with higher echelons that is conducted particularly during programing and budgeting.

- Expand the scope of planning to provide more detail of resource sensitive issues for use in programing.

CHAPTER 7

OBSERVATIONS

7-1. INTRODUCTION. The Management Analysis of Key Resource Operations (MAKRO) Study is a unique, detailed assessment of Army PPBS. The planning, programing, and budget formulation phases of PPBS were examined concurrently in a systematic analysis, and similar type descriptive models were prepared for each phase. The analysis considered primarily the main activities associated with resource management at HQDA. As documented in the preceding chapters and supporting appendices, the MAKRO Study identified specific ways of improving the system and provided descriptive network diagrams to assist in managing CY 79 PPBS processes. The study also validated the feasibility of and benefit to be gained from the application of a modified network methodology in the analysis and management of a complex system. This chapter discusses the Essential Elements of Analysis (EEA) and the major observations on Army PPBS.

7-2. ESSENTIAL ELEMENTS OF ANALYSIS. The EEA specified in the tasking directive were addressed in the study and are discussed below.

a. What are the most likely, early and late, times along with responsible agency and input documents for each PPBS work activity?

A thorough investigation of the main HQDA planning, programing and budget formulation activities was conducted. Descriptive network diagrams were constructed and include the following information: a narrative description of each work activity, the identification of the agency responsible for the work, the amount of time available for each activity and a graphic representation of the relationships among all the work activities. The determination of earliest, most likely and latest completion times was not practical; the agencies were generally able to provide only an estimate of the time available for the accomplishment of the activities.

b. What are the functional relationships between expected completion times and resource levels of responsible agencies for work activities on critical path?

The organizations performing the PPBS activities documented in the analysis were also performing either non-PPBS activities or PPBS activities for other phases (or both) concurrently. There

was no historical record of the personnel resources devoted to a particular activity nor could a record be generated short of institutionalizing a workload reporting system. The organizations uniformly employ all the people available to prepare the best product possible within the time allotted.

c. Are there information flow patterns that can be altered to redistribute the workload and promote increased efficiency?

Management prescriptions in Chapter 5 suggest alternative information flow patterns; e.g., the use of more timely planning force guidance as input to the program force development process; the release of LOGSACS after a single quality assurance revision. The reorientation of the planning process discussed in Chapter 6 (paragraph 6-3) suggests a significant redistribution of the workload between planning and programing in order to facilitate the preparation and analysis of the Army program.

d. How can changes to DOD and Army PPBS--such as ZBB, ZBP, and the CG--be accommodated within the current schedule and level of effort?

The ZBB, ZBP, and CG improve the PPBS by emphasizing analysis; the Army needs time to prepare analyses (see Chapter 6, paragraph 6-2). The changes to DOD and Army PPBS can best be accommodated by eliminating some of the numerous, repetitive iterations between DOD and Army. The identification of which iterations to suggest for elimination and how to best accommodate future changes to the system are two reasons to establish a consistent, well coordinated means of assimilating PPBS changes.

e. What are the workload effects of alternative Defense Department proposals for the PPBS cycle on activity statistics and event scheduling?

The significant OSD action that addresses alternatives to PPBS is the Defense Resource Management Study (DRMS). The DRMS was prepared at the request of the President, directed by D. B. Rice of the Rand Corporation, and published in February 1979. The main proposals of the DRMS are: (1) to destructure the current PPBS cycle and allow more time for analysis; (2) to expand the role of planning and create a planning window; and (3) to combine the program and budget reviews in the fall. The MAKRO analysis independently arrived at similar observations to improve the system (see Chapter 6). If the DRMS proposals are implemented in conjunction with a reduction in the iterations between DA and OSD (and not in addition), the Army PPBS would be provided more time for thorough analysis.

f. What are the effects of alternative DA resource management organization structures (DCSRM Study) on work activity statistics and event scheduling?

Some disruption, associated with the initial organizational changes and redistribution of personnel, was mentioned in the interviews. However, the research did not illuminate any systemic positive or negative effects from the DCSRM suggested organizational structures. The activities continued to be performed by the personnel available and to the degree possible within the milestones.

7-3. OBSERVATIONS. The major observations resulting from this study of the Army PPBS are presented in the following material.

a. The most fundamental observation is that the 17-year old PPBS is a very loosely defined system hampered by outdated regulations and inconsistent definitions.

(1) There is no organization dedicated solely to managing this system. The system is suspense driven and continually reacts to changes imposed by higher headquarters. The importance of PPBS to the Army, plus its complex and dynamic nature, indicates the Army would be well served to have a central system manager. The manager would monitor the system and advise on how to assimilate changes and how the system ought to evolve to best serve the Army.

(2) If there ever was a language common throughout the PPBS, it failed to evolve consistently as the PPBS changed. Consequently, there is no common language today. A common language is necessary if the transitions from planning to programing to budgeting are to be smooth and effective.

b. The Army PPBS reacts to JCS and OSD milestones; the frequency of the milestones requires too many interactions during the year. The preparation of timely responses precludes the opportunity for deliberate analysis.

(1) In 14 months, from the submission of Army comments for the draft CG to the final submission for the President's budget, the Army prepares 8 sets of programing or budgeting submissions and receives 7 sets of changing guidance.

(2) Decisionmaking is a result of numerous iterations in reaction to changing guidance and not as a result of the consideration of alternatives supported by rigorous analysis.

c. The link between planning and programing is weak; the underlying reasons are: (1) Army planning generates force requirements that cannot be funded and (2) Army programing generates details for resource allocation based more on OSD guidance than on the results of Army planning.

(1) Army planning responds to the JSPS; it focuses on the military strategy and the design of a force and force-related requirements that exhibit a capability to attain the national security objectives 10 years hence. Army planning does not develop detailed plans that address resource sensitive issues to complement the force and thus attain the capability.

(2) Army programing responds to OSD; it generates balanced resource allocations among all resource consumers for five years. Thus, Army programing controls the future capability that the Army will actually attain.

(3) Army force requirements are developed in each phase of PPBS. Neither the planning force nor the program force is affordable within the level of resources committed to the Army. The scope of the force development process should be expanded to encompass a methodology for generating detailed Army objectives and corresponding alternatives--force and non-force complements--that will guide the programing of constrained resources in a direction consistent with planning.

d. The link between programing and budgeting is improving; separate Army programing and budgeting activities are evolving toward a single, coordinated process. If this trend continues, there should be a high degree of consistency between the program and the budget.

e. The Army PPBS is a system comprised of interrelated management processes that are amenable to analytical investigation.

(1) Detailed representations or models of the management processes were constructed. These models were analyzed singularly, and as interconnected processes, using techniques of network theory.

(2) The use of network theory in the MAKRO Study represents an important advance in the analysis of the Army PPBS. Each major process in the Army PPBS is described by a pictorial representation. The efforts reported here can be useful to the Army in managing the PPBS now and in assimilating changes to the system in the future.

APPENDIX A
STUDY CONTRIBUTORS

1. STUDY TEAM

a. Study Director

Mr. Frank A. Distasio, Jr., Methodology, Resources and
Computation Directorate

b. Team Members

Lieutenant Colonel Samuel K. Wasaff, Jr., Joint Forces and
Strategy Directorate
Major Samuel M. Burney, Jr.
Mr. George E. Armstrong

c. Other Contributors

Major Mitchell E. Bonnett
Major Seth J. Ferrara IV, War Gaming Directorate
Mr. George T. Hawkins

d. Support Personnel

Ms Thelma Laufer
Support received from personnel in the Word Processing
Center and Graphics Branch

2. PRODUCT REVIEW BOARD

Mr. William T. Harkey, Chairman, Systems Force Mix Directorate
Mr. Johnnie J. Shaw
LTC Gary W. Lawhead, Force Concepts and Design Directorate



DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF STAFF
WASHINGTON, D.C. 20310

DACS-DPD

26 October 1978

MEMORANDUM THRU: DEPUTY CHIEF OF STAFF FOR OPERATIONS AND PLANS

FOR: COMMANDER, US ARMY CONCEPTS ANALYSIS AGENCY

SUBJECT: Management Analysis of Key Resource Operations (MAKRO) Study -
Modification of Tasking Directive

1. References:

a. Briefing by CAA to the study sponsors, 28 August 1978, subject: MAKRO In-Process Review.

b. Memorandum, DACS-DP, 7 June 1978, subject: Tasking Directive - Management Analysis of Key Resource Operations (MAKRO).

2. The study schedule is hereby revised so that additional time will be available for network analysis (reference 1a).

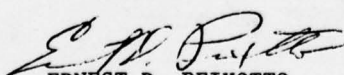
3. Accordingly, the MAKRO Tasking Directive (reference 1b) is modified as follows:

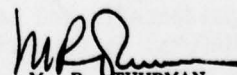
a. Paragraph 6f(1). The study findings will be available in draft and/or briefing form on or about:


- 16 October 1978 for Planning and Programing.
- 15 December 1978 for Budget Formulation.
- 31 January 1979 for Budget Execution.

b. Paragraph 6f(2). The study report will be published by 30 March 1979.

c. Paragraph 10b. Delivery of the Final report: 30 March 1979.


ERNEST D. PEIXOTTO
Major General, GS
Director of the Army Budget


M. R. THURMAN
Major General, GS
Director, Program Analysis
and Evaluation


LEE E. SURUT
Major General, GS
Director, Strategy
Plans, and Policy



DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF STAFF
WASHINGTON, D.C. 20310

DACS-DP

7 JUN 1978

MEMORANDUM THRU ~~DEPUTY CHIEF OF STAFF FOR OPERATIONS AND PLANS~~ (W) 9 JUN
FOR COMMANDER, UNITED STATES ARMY CONCEPTS ANALYSIS AGENCY

SUBJECT: Tasking Directive - Management Analysis of Key Resource Operations (MAKRO)

1. PURPOSE. This directive provides for a study to analyze the Army resource planning, programing and budgeting systems and to prescribe systematic measures for managing the preparation of resource justification documents.

2. STUDY TITLE (Category 6, Management). Management Analysis of Key Resource Operations (MAKRO).

3. BACKGROUND.

a. The Department of the Army (DA) Planning, Programing and Budgeting System (PPBS) is the paramount resource management system within the Army. The system provides for an orderly progression from planning, through programing to budgeting. Planning addresses the development of military strategy, force objectives, force capabilities and resources for attainment of national security objectives. Programing translates plans into comprehensive allocations of forces, manpower, and funds for a five-year period and within the Department of Defense (DOD) specified fiscal and manpower constraints. Budgeting is divided into two phases: formulation which refines the first three program years into detailed fund estimates and manpower statements; and execution after apportionment which includes the allocations of funds and manpower, the obligation and expenditure of funds, and the reporting on the use of funds and manpower. The dissemination of guidance to and participation by the Army Staff and major commands (MACOMs) is essential to Army PPBS.

b. The Army PPBS responds to and is dependent upon the DOD PPBS and the Joint Strategic Planning System (JSPS). The DOD and DA PPBS are dynamic and evolutionary; major impacts on the Army PPBS have resulted from Zero-Base Budgeting (ZBB) and the Consolidated Guidance (CG) directives. A study to investigate the organizational and systems interfaces which are emerging from the changing PPBS is desirable and may provide management insights to improve existing resource management techniques. The study should include systematic procedures to capitalize on available Army analytical capabilities and information for analysis.

4. STUDY SPONSORS. The study will be cosponsored by:

- a. Comptroller of the Army (COA).
- b. Director, Program Analysis and Evaluation (D,PA&E), Office of The Chief of Staff, Army (OCSA). (Primary study coordinator)
- c. Director, Strategy, Plans and Policy, Office of the Deputy Chief of Staff for Operations and Plans.

5. STUDY AGENCY. US Army Concepts Analysis Agency (CAA).

6. TERMS OF REFERENCE.

a. Problem. The Army PPBS is composed of separate planning, programming and budgeting cycles which have largely sequential relationships; yet the cycles occur concurrently every year. The annual overlap of the cycles (each with independent milestone schedules) causes numerous actions to be performed throughout the Army Staff and the MACOMs. This complex and demanding PPBS environment contributes to duplications, conflicting efforts and reductions in the amount of time available for essential analysis.

b. Purpose. To analyze the key components and interactions of the Army PPBS, and to prescribe systematic measures which will improve the sequence of actions and the time available for analysis while preparing the various PPBS documents in accordance with DOD schedules and milestones.

c. Objectives.

- (1) Determine the complete set of work activities necessary to accomplish one cycle of the PPBS.
- (2) Collect data on and analyze work activities to determine organizational and system interfaces and the time-phasing of activities.

(3) Represent the relevant actions in the key components of PPBS as network models.

(4) Analyze quantitatively the network models of the PPBS.

(5) Formulate alternative measures for improving the sequencing of actions and the distribution of available time for analysis in the preparation of PPBS documents.

(6) Prescribe systematic measures to facilitate development of PPBS documents.

(7) Determine means to ensure that Army planning is reflected in the Army program and budget.

d. Scope.

(1) The study will analyze the frequency, duration times, and workload associated with critical actions in the PPBS.

(2) The study will examine the planning process and its interface with the other phases of the system.

(3) The study will encompass all appropriations in a zero-base budgeting (ZBB) and zero-base programming (ZBP) environment.

(4) The study will address the Army schedule, activities and duration times associated with the new DOD Consolidated Guidance (CG).

(5) The study will concentrate on the DA level actions associated with the formulation of guidance for the MACOMs and the preparation of the PPBS documents.

(6) The study will include the MACOM and installation level actions associated with the formulation of command input to the DA programming, budgeting and execution documents.

e. Limitations.

(1) The study will model key Army PPBS actions only; DOD, Joint Staff, Office of Management and Budget (OMB), and Congressional actions will be addressed as input to or output of the Army system.

(2) Data necessary to support the development of network models will be collected from selected MACOMs and representative installations only.

(3) Network models developed in the study will aggregate data gathered at a level of detail relevant to the accomplishment of the study objectives.

(4) Analysis of management information systems (MIS) will - focus on the information flows and not the internal operations of the MIS.

(5) The study will formulate and prescribe alternative information flow procedures; staffing of the study report and implementation of prescriptions will be the responsibility of the study sponsors.

f. Constraints.

(1) The study findings will be available in a draft and/or briefing form on or about 15 November 1978.

(2) The study report will be published by 17 December 1978.

g. Assumptions.

(1) Administrative staffs will not be augmented as a result of the study; a redistribution of personnel may be prescribed.

(2) The DOD, Joint Staff, OMB and Congressional milestone schedules will not be altered to accommodate study prescriptions.

(3) All Army PPBS actions do not require the same priority or level of support.

h. Essential Elements of Analysis.

(1) What are the most likely, early and late times along with responsible agency and input documents for each PPBS work activity?

(2) What are the functional relations between expected completion times and resource levels of responsible agencies for work activities on critical path?

(3) Are there information flow patterns that can be altered to redistribute the workload and promote increased efficiency?

(4) How can changes to the DOD and Army PPBS - such as ZBB, ZBP and the CG - be accommodated within the current schedule and level of effort?

(5) What are the workload effects of alternative Defense Department proposals for the PPBS cycle on activity statistics and event scheduling?

(6) What are the effects of alternative DA resource management organization structures (DCSRM Study) on work activity statistics and event scheduling?

7. RESPONSIBILITIES.

a. The COA, D,PA&E and Director, DAMO-SS will provide study coordinators to assist the study team.

b. DA Staff Agencies and the MACOMs will:

(1) Provide a single POC to support the study.

(2) Provide information on management systems and identify associated problem areas.

(3) Collect and maintain time and workload measurement data pertinent to the quantitative analysis.

(4) Participate in quality assurance efforts to review and validate the models generated in the study.

8. LITERATURE SEARCH.

a. All DA Staff Agencies, MACOMs, and subordinate units have responsibility for and interest in portions of the MAKRO study.

b. The study effort will require extensive interviews with agency representatives responsible for PPBS actions.

c. The following studies should be examined during the research effort.

(1) Study Report, CAA-SR-77-7, dated June 77, subject: Management of Change (MOC).

(2) Report, General Research Corporation, dated 31 December 1977, subject: Programing and Budgeting Handbook.

9. REFERENCES.

a. US Department of the Army. Planning, Programing and Budgeting within the Army. AR 1-1, 25 May 1976.

b. US Department of the Army, Office of the Chief of Staff. The Planning, Programing and Budgeting System. CSR 11-1, 25 Nov 74.

c. US Department of the Army. Army Comptroller Handbook. DA Pamphlet 37-4, 15 Apr 76.

d. US Department of Army. Budget Formulation Directive. OCA, 23 June 76, as changed.

e. US Department of the Army. Army Staff Budget Responsibilities. CSR 37-4, 21 Jun 75, as changed.

f. US Department of the Army. ZBB Guidance and Instructions. OCA, (published in BRC Memoranda and letters beginning in December 1976).

g. US Department of Defense, Budget Guidance Manual, 7110-1-M. OSD, 15 June 1973, as changed.

h. US Department of Defense. The Planning, Programing, and Budgeting System. DOD Instruction 7045.7, 21 Oct 69.

10. ADMINISTRATION.

a. Support. ADPE support will be accomplished using CAA computer resources.

b. Milestones. See Inclosure 1. Delivery of final report: 17 December 1978.

c. Control Procedures.

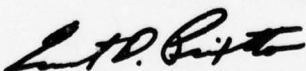
(1) The Budget Review Committee (BRC)/Program Guidance and Review Committee (PGRC)/Strategy and Planning Committee (SPC) will provide General Officer guidance to the study.

(2) The study coordinator will satisfy reporting requirements of AR 5-5, The Army Study System.

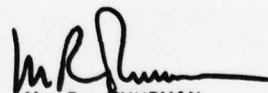
d. Action Document. A final study report will be prepared.

e. This directive has been coordinated with CAA in accordance with AR 10-38.

1 Incl
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ERNEST D. PEIXOTTO
Major General, GS
Director of the Army Budget



M. R. THURMAN
Major General, GS
Director, Program Analysis
and Evaluation



LEE E. SURUT
Major General, GS
Director, Strategy,
Plans, and Policy

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ARMY CONCEPTS ANALYSIS AGENCY BETHESDA MD
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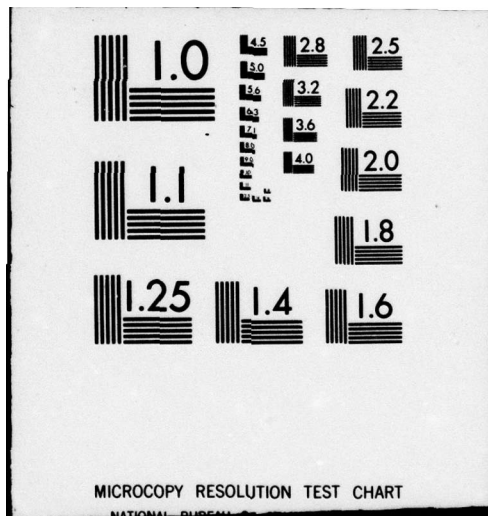
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STUDY SCHEDULE

- | | |
|--|-----------|
| 1. Determine the scope, key processes, relevant level of detail and opportunity for quantitative analysis. | Mid Feb |
| 2. Organize the data collection effort to identify the significant activities, information flows and quantitative factors. | Late Feb |
| 3. Represent the Planning cycle by using network models. | Mid Mar |
| 4. Represent the Programing cycle by using network models. | Mid May |
| 5. Represent the Budgeting cycle by using network models. | Late Jun |
| 6. Represent the Accounting cycle by using network models. | Mid Jul |
| 7. Link the individual network models into a composite base case model. | Early Aug |
| 8. Diagnose the base case model and formulate alternative information flows. | Mid Sep |
| 9. Prescribe systematic measures to facilitate the flow of required information. | Late Oct |
| 10. Deliver the study report to the study sponsor. | 17 Dec 78 |

B-8

INCLOSURE 1

APPENDIX C

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CAA-SR-79-6

APPENDIX D

FORCE DEVELOPMENT PROCESS

D-1. PURPOSE. The force development process is the foundation of the Army PPBS. Just as in a building the foundation supports the columns, the force development process supports the planning, programing, and budgeting phases (see Figure D-1). The process is a series of procedures by which the Army identifies the forces to satisfy planning guidance, and then uses the force requirements in the allocation of resources in the planning, programing, and budgeting phases of PPBS respectively. What follows is a description of the minimum risk, planning, and program force development processes identified in the MAKRO research and analysis.

D-2. DESCRIPTION

a. General. The force development process flows sequentially through force structuring stages which parallel the phases of PPBS. The minimum risk and planning forces, the program force, and the budget and current forces apply to the planning, programing, and budgeting phases respectively. The force requirements that develop in each stage are evolutionary. The stages progressively refine a force structure from initial estimates. The refinement occurs by defining the force structure in greater detail and by applying increasingly restrictive resource guidance to the size and composition of the force structure; this reduces capability and increases risk. Figure D-2 portrays the refinement on the left and the impact on the force structure on the right. The figure also reflects the decrementing of the force at each stage. The minimum risk, planning, and program forces are developed in response to successive, increasingly restrictive force sizing and structuring scenarios. The size of the force is decremented accordingly. In addition, the program force composition is decremented further in response to decisions by higher authority in the programing and budget formulation phases. The current force is in the field during budget execution; its size and composition are affected by manpower availability, materiel procurement, and unit readiness conditions. In the subparagraphs that follow, the minimum risk, planning and program force stages are described in terms of the methods used to apply constraint guidance and to develop details for the force. The impact on risk and force capability is also discussed. First, a brief discussion of the force building blocks.

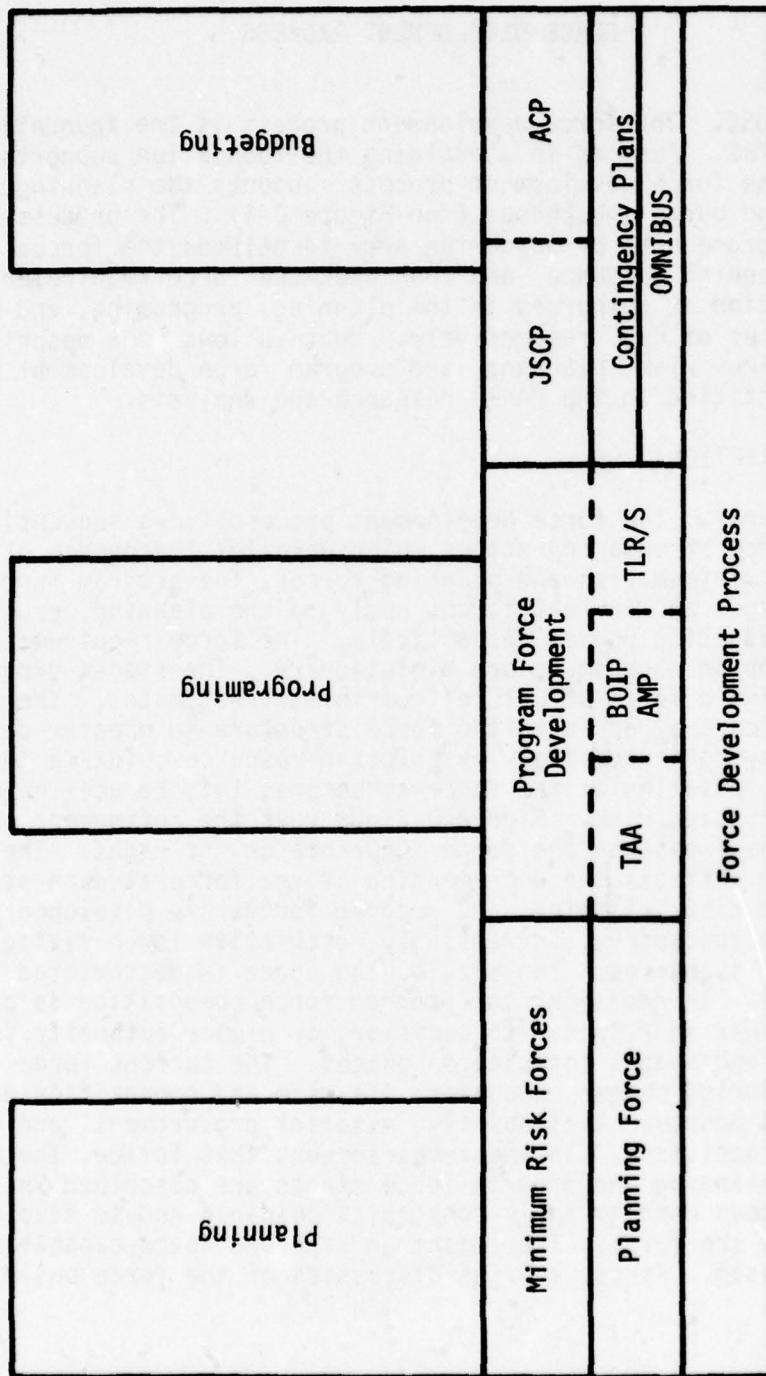


Figure D-1. The Foundation

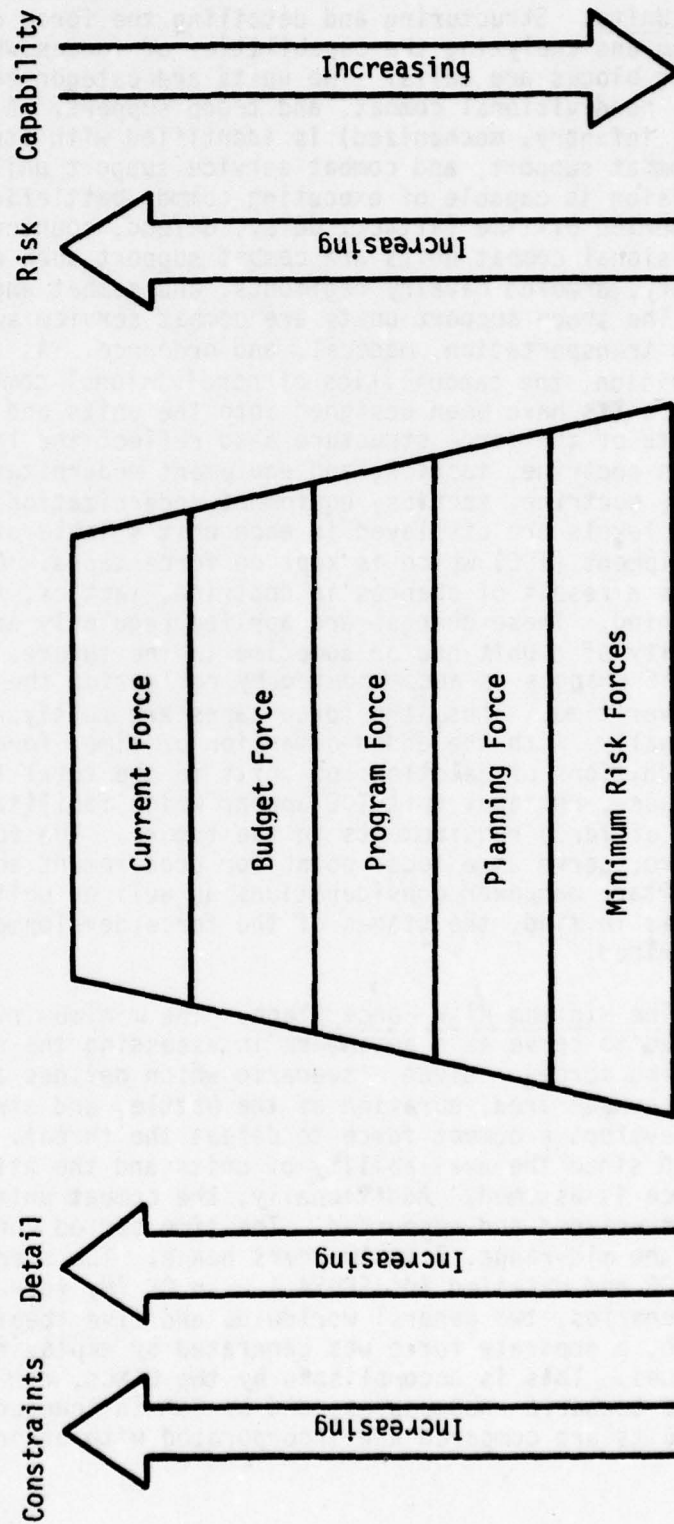


Figure D-2. Refinement Impact

b. Units. Structuring and detailing the force depends upon defining and analyzing the capabilities of forces whose basic building blocks are units. The units are categorized as divisional, nondivisional combat, and troop support. A type division (armor, infantry, mechanized) is identified with its organic combat, combat support, and combat service support units. Each type of division is capable of executing common battlefield maneuvers for a period of time (attack, delay, defend, counterattack). The nondivisional combat units are combat support such as corps artillery, armored cavalry regiments, and combat engineer battalions. The troop support units are combat service support units such as transportation, medical, and ordnance. As in the case of the division, the capabilities of nondivisional combat and troop support units have been designed into the units and are known. All units of the force structure also reflect the latest developments in doctrine, tactics, and equipment modernization. The capability, doctrine, tactics, equipment modernization, and three manning levels are displayed in each unit's Table of Organization and Equipment (TOE) which is kept on force tapes. Changes in TOE occur as a result of changes in doctrine, tactics, new equipment, and manning. These changes are applied regularly and affect the capability of a unit now or sometime in the future. The future impact of changes is accommodated by reflecting the force in tapes over time. Thus, the force tapes are multiyear in nature. Additionally, with the added dimension of time, force tapes reflect additions or deletions of units to the total force. On some force tapes, notional unit TOE appear which facilitates the generation of force requirements in the future. The force tapes, therefore, serve as a focal point for procurement actions, supply, and military manpower considerations as well as unit actions. With this in mind, the stages of the force development process can be described.

c. The Minimum Risk Force Stage. The minimum risk force is generated to serve as a benchmark in assessing the risk of later developing forces. Given a scenario which defines a threat, situation, combat area, duration of the battle, and strategy, this stage develops a combat force to defeat the threat. No risk is involved since the availability of units and the attainability of the force is assumed. Additionally, the combat units are assumed fully structured and supported. The time period considered is the end of the mid-range, 7 to 10 years hence. The scenario is posed in the CG and detailed in JSPDSA I. In CY 78, there were seven such scenarios, two general worldwide and five theater. For each scenario, a separate force was generated by employing wargaming techniques. This is accomplished by the CINCs, whose combat area the scenario encompasses, and by CAA in independent efforts. The results are compared and incorporated with other Service

capabilities and requirements (Figure D-3). Specifically, for each scenario in the CG, the ARSTAF, under the direction of ODCSOPS (Strategic Plans and Policy Division) identifies and evaluates the threat, examines a strategy, applies doctrine and policies, and identifies force objectives. Army proposals are presented in the joint arena during JSPDSA I. Concurrently, the ARSTAF and CAA develop force planning data and assumptions (AFPDA) which provide planning factors, assumptions, and analyses guidance to be used in generating all forces from minimum risk to the lowest unit analysis in TRADOC. Upon publication of JSPDSA I, the CINCs and CAA generate force requirements. ODCSOPS (War Plans Division) compares the results and incorporates other Service considerations. The outputs are the minimum risk forces. In addition, ODCSOPS (War Plans Division) studies each scenario and force and determines the optimum time combat units should be introduced into the battle area. These times are defined as required delivery dates (RDD) which will be used in the next stage of force development. The minimum risk force in the most general scenario exceeds resources expected to be available in the time period. The next stage decrements the force at the least sacrifice of capability or increase in risk.

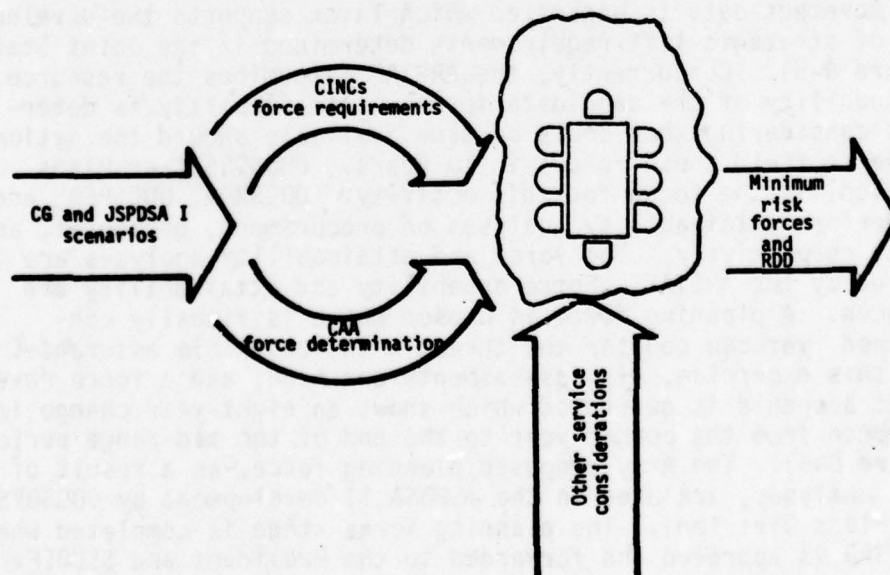


Figure D-3. What Force Defeats the Threat?

d. The Planning Force Stage. The planning force is generated to display force requirements which must be attained to satisfy force sizing guidance. This guidance is in the form of a force sizing scenario in the CG and detailed in JSPDSA I. In addition to defining threat, force objectives, and areas of commitment, the scenario addresses simultaneity of contingencies, mobilization, and warning. The contribution to combat capability by the other Services and allies is considered. Such considerations trade Army combat units for those of the other Services and allies which decrement the Army force and which preserve capability. The force is further decremented by considering the mobility assets which will transport the force according to the RDD. Usually, the mobility requirements to move and resupply the force exceed the capability from all sources (Air Force, Navy, Civil Reserve Air Fleet). In this case, time and mobility assets are constraints which decrement the force and increase risk since the force will be sized within mobility capability. ODCSOPS (War Plans Division) is the ARSTAF point of contact during this activity. The output at this point is a candidate combat force defined in terms of number and types of divisions and separate combat brigade organizations (Figure D-4). To this force ODCSOPS (Force Plans and Structure Division) adds nondivisional combat units. The candidate combat force and nondivisional combat units with RDD are analyzed by CAA. CAA performs analyses to determine the capability of the candidate combat force and the combat service support units which will be required to support the force. In addition, using the RDD, movement data is generated which later supports the development of strategic lift requirements determined in the Joint Staff (Figure D-5). Concurrently, the ARSTAF determines the resource attainability of the candidate forces. Attainability is determined considering what could be made available should the nation decide to field these forces in 10 years. ODCSOPS (War Plans Division) is the focus for this activity. ODCSRDA, ODCSPER, and OCA perform attainability analyses on procurement, personnel, and costs, respectively. The force and attainability analyses are studied by the ARSTAF. Force capability and attainability are balanced. A planning force is chosen which is fiscally constrained, yet can counter the threat with reasonable assurance. From this exercise, risk assessments are made; and a force development schedule is generated which shows an eight-year change in the force from the budget year to the end of the mid-range period (Figure D-6). The Army proposed planning force, as a result of these analyses, are used in the JSPDSA II development by ODCSOPS (War Plans Division). The planning force stage is completed when the JSPD is approved and forwarded to the President and SECDEF.

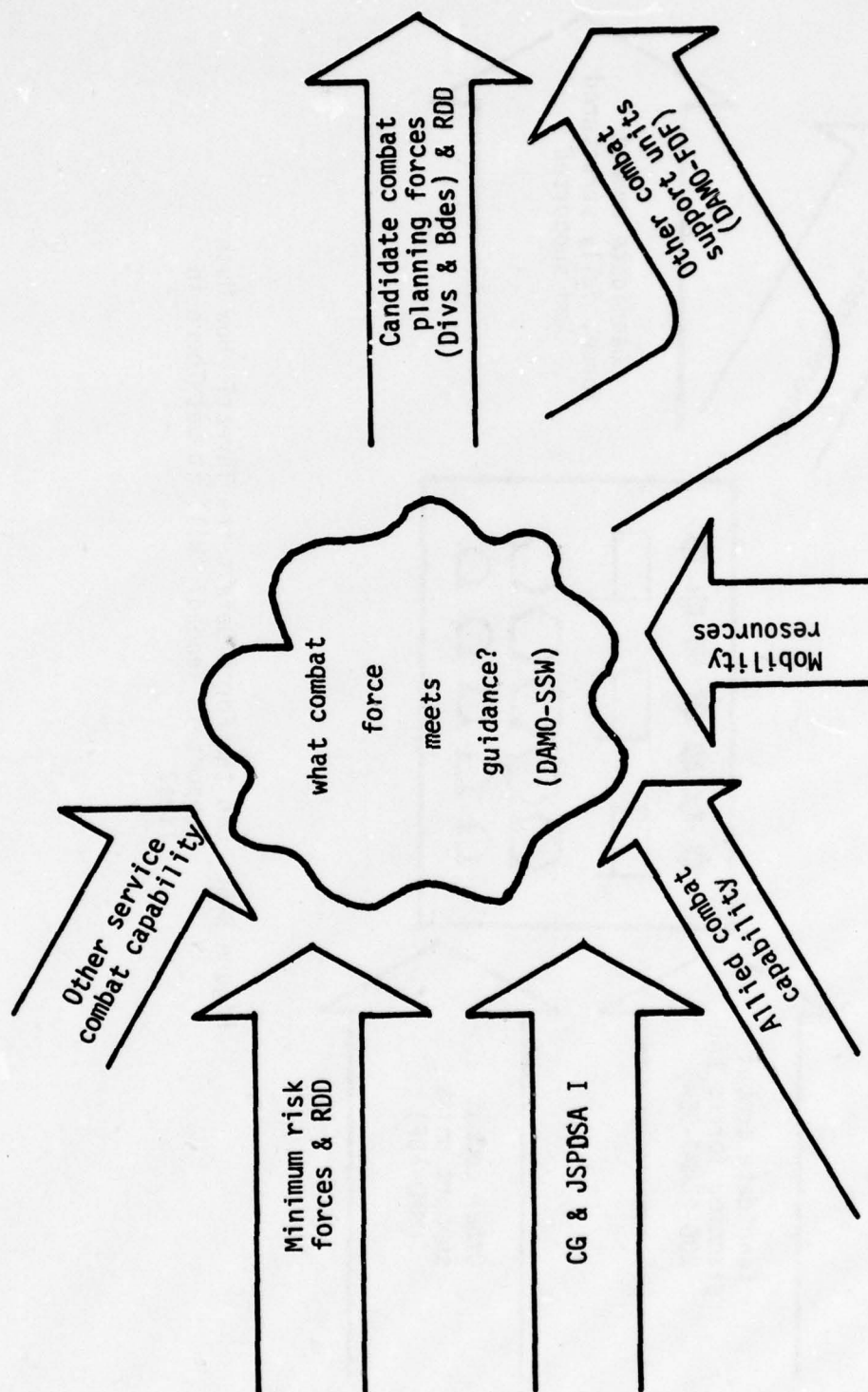


Figure D-4. What Combat Force Meets Guidance?

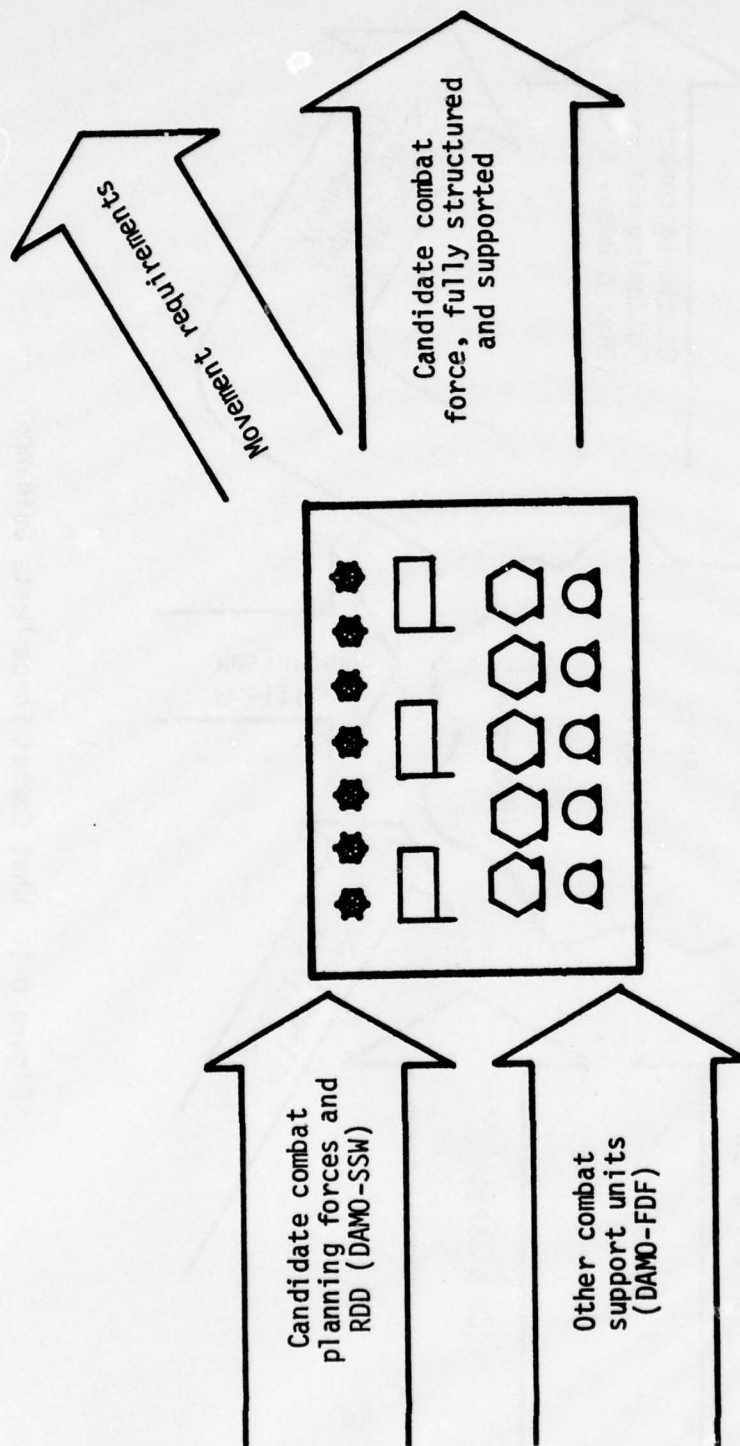


Figure D-5. Can the Force Defeat the Threat? How Much Support is Needed? Will it Get There in Time?

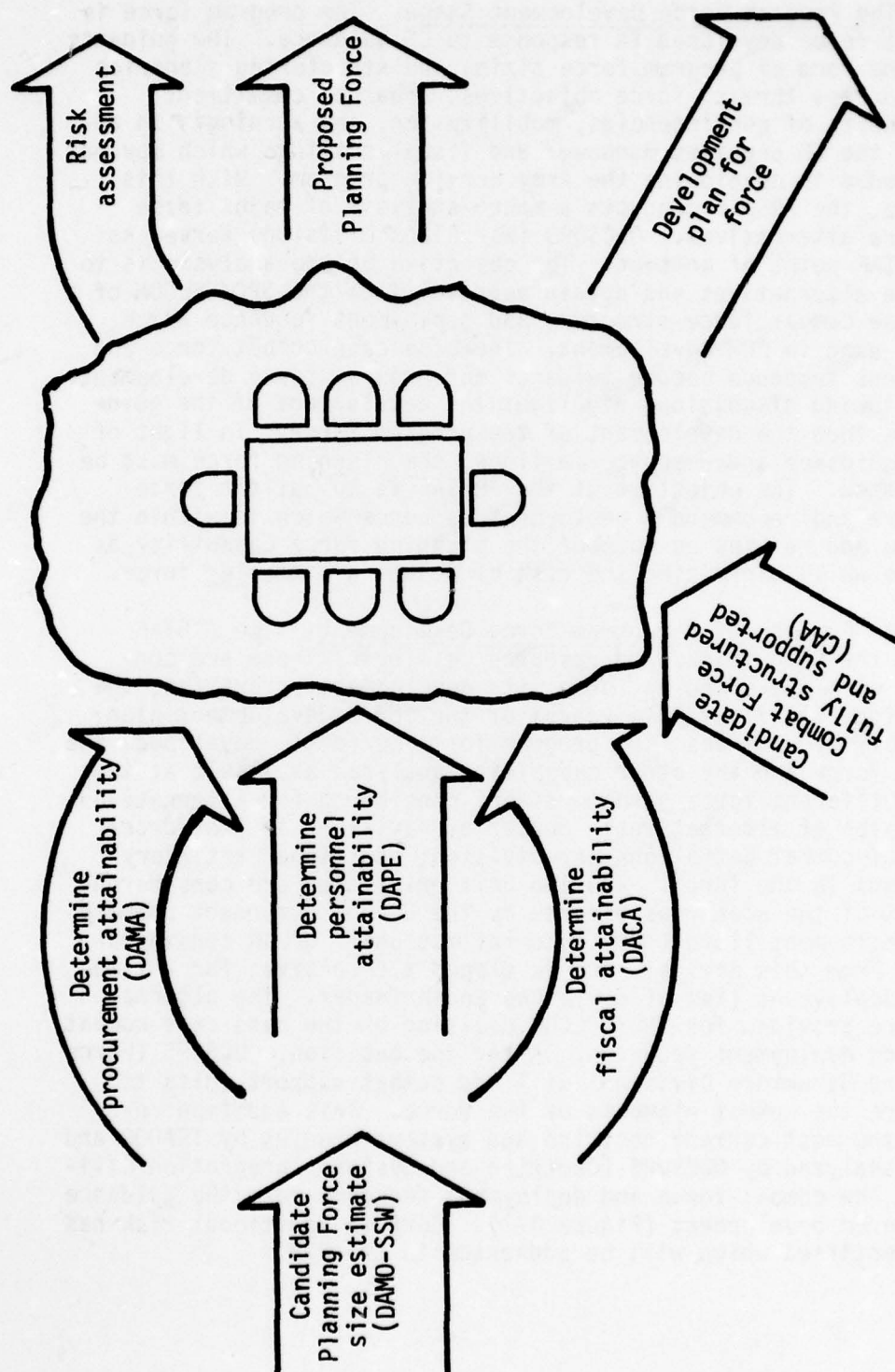


Figure D-6. Can the Force be Attained?

e. The Program Force Development Stage. The program force is the last force developed in response to CG guidance. The guidance is in the form of program force sizing and structuring scenarios which address threat, force objectives, areas of commitment, simultaneity of contingencies, mobilization, and warning. In addition, the CG provides manpower and fiscal ceilings which may not be exceeded in developing the Army Service program. With this guidance, the ARSTAF conducts a macro-analysis of major force structure alternatives. ODCSOPS (War Plans Division) serves as the ARSTAF point of contact. The objective of the analysis is to generate alternatives and obtain approval from the SPC/SELCOM of a base case combat force structure and deployment sequence which will be used in POM development. The base case combat force and deployment sequence become guidance for program force development. The following discussions highlight the development of the guidance and then the development of the program force. In light of the CG guidance and resource ceilings, the planning force must be decremented. The objective of the ARSTAF is to build a force structure and recommend a deployment sequence which is within the guidance and retains as much of the planning force capability as possible while minimizing the risk of assuming a smaller force.

(1) Guidance for Program Force Development. The ARSTAF studies the CG guidance and resource ceilings. These are considered with the planning force, its development priorities, the POM period (the first five years) of the force development plan, attainability analyses, the program force currently developed, the current force and any other capability analyses available at that time. Different force structures are considered for alternatives; as examples of alternatives: number of divisions in the force; number of combat battalions per division; additional artillery battalions in the force. RDD and unit priorities are considered in light of the scenarios offered by the CG and component command force deployment lists (TPFDL), a reflection of OPLAN considerations. From this analysis are developed alternatives for a time-phased deployment list of divisions and brigades. The alternatives are provided for SPC/SELCOM decision on the base case combat force and deployment sequence. After the decision, ODCSOPS (Force Plans and Structure Division) will add combat support units to structure the combat elements of the force. This addition reflects the most current doctrine and systems studies by TRADOC and DARCOM analyzed by ODCSOPS (Doctrine and Systems Integration Division). The combat force and deployment sequence form the guidance for program development (Figure D-7). Certain additional risk has been identified which will be addressed in the POM.

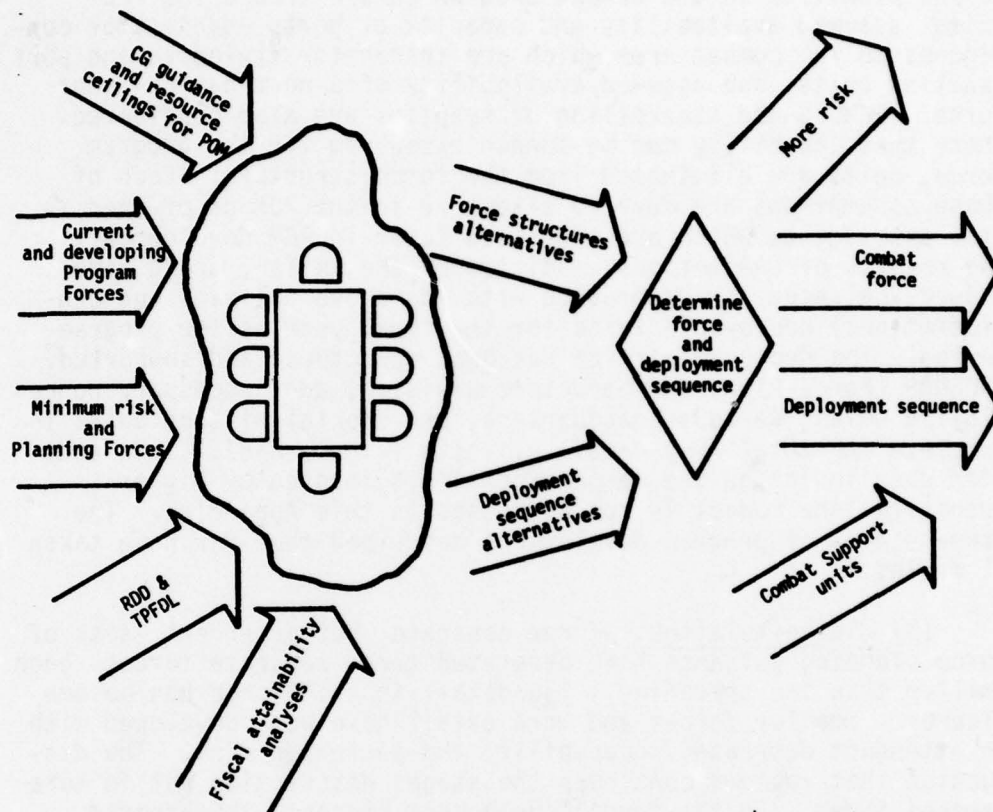


Figure D-7. What Force Level Can be Developed by POM?

(2) Program Force Development Process. This process determines the total Army force structure requirements. It is a refinement step which leads eventually to a complete exposition of the force used to prepare the Army POM. CAA takes the guidance for program force development and generates the combat service support units which fully support the combat force (see Appendix E, Annex II, Network F for details). The results are studied by the ARSTAF and the number and type of service support units are modified by current support policies. This refinement step is necessary, since the numbers and types of units are generated based on doctrine for the mid-range period and because the total

force exceeds the resource limitation guidance. The force being developed is for the end of the program period. Some of the considerations for decrementing the service support units in addition to resource constraints, are: assumed availability and capability of POL pipelines in the combat area which are traded for POL units; assumed availability and capacity of ports adjacent or contiguous to the combat area which are traded for stevedore and port handling units; and assumed availability of a host nation labor force. POMCUS and stockpiling of supplies are also considered. Where that capability can be funded elsewhere for the program force, units are eliminated from the force structure. Each of these assumptions are covered elsewhere in the POM or offered in risk assessments which are addressed later in POM development. The results of CAA actions, modified by the ARSTAF, are a time-phased, balanced (in accordance with the above policies and considerations) deployable force for the final year of the program period. The deployable force has been structured and supported. ODCSOPS (Force Plans and Structure Division) adds necessary nondeploying units, various headquarters, and special mission units to complete the total Army detail of units (Figure D-8). This addition does impact on the manpower ceilings imposed by higher authority (the impact is not discussed in this Appendix). The three stages of program development described thus far have taken 21 months.

(3) Recapitulation. Three separate, but dependent, sets of force planning guidance have generated three separate forces, each smaller than the preceding. The detail in each force has become clearer. Smaller forces and more detail have been developed with an attendant decrease in capability and increased risk. The discussion that follows continues the stages description but in more general terms. In the force development process, the program force is detailed even further and its composition is changed as a result of higher authority decisions on resource allocations.

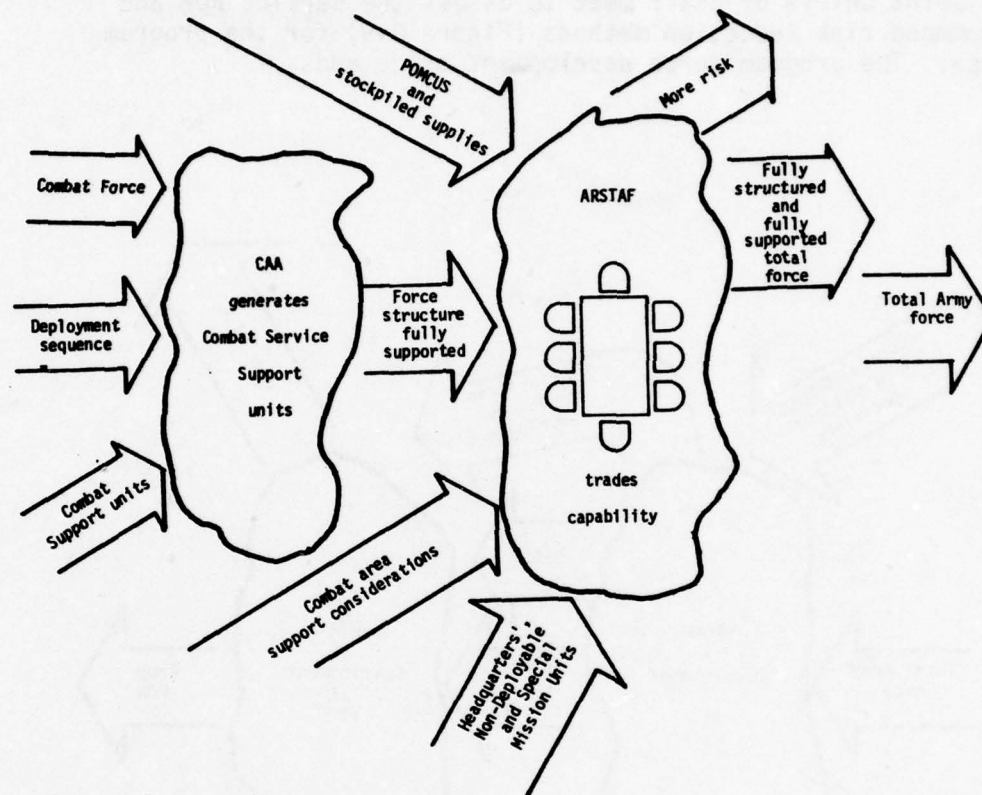


Figure D-8. Can the Force be Supported?

f. Program Force Development Stage, Continued. The program force development process ends in October. The force is "frozen" on the force tapes--no further units or changes to TOE will occur without general officer approval. The proposed program force is used as a basis for the SACS process which develops requirements for personnel and equipment to MOS and LIN level of detail. The program force is matched with the current force and priorities for unit development (based on RDD and the deployment schedule) to determine what troop actions--activations and deactivations--must be accomplished to achieve the force over five years. ODCSOPS (Strategic Plans and Policy Division and War Plans Division) with the

ARSTAF develop priorities for program development using the results of the force development process, CSA announced priorities, OPLANS, and current decisions in ongoing programing and budgeting phases. The program force is further decremented and altered throughout the POM development processes from October until May. The Joint Chiefs of Staff meet to assess the service POM and recommend risk reduction methods (Figure D-9) for the program force. The program force development stage ends.

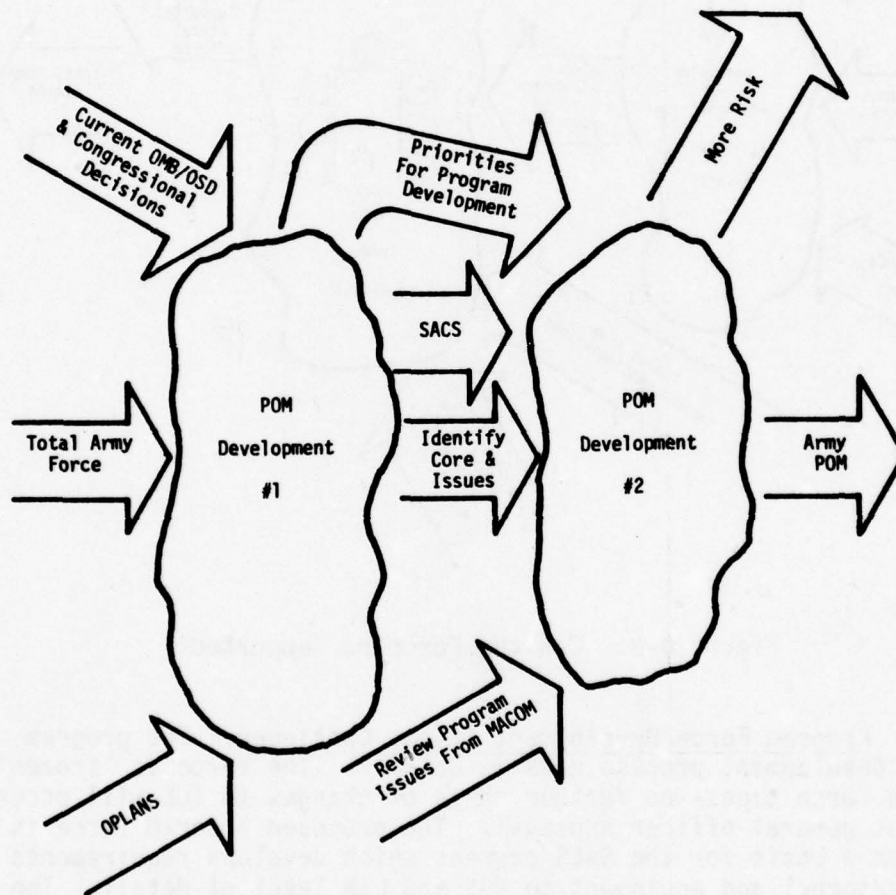


Figure D-9. What Must be Bought to Field the Force?

g. Conclusion. The force development process is not over. The program force size and structure will probably not remain constant during the budget and current stages of development. Decisions on the allocation of resources will affect aspects of the force such as manning levels, equipment modernization schedules, and unit readiness. Those decisions are based on such things as: (a) civilian manpower ceilings; (b) officers/EM ratios; (c) inflation considerations on the budget; and (d) growth of the budget in relation to gross national product. The impact of these decisions on the capability, size and structure of the force were not explored in this study.

D-3. INSIGHTS. The following insights have been gained from an analysis of the force development process described above.

a. Orientation of Force Stages. The orientation of the minimum risk and planning force development stages differs from that of the program force development stage. The minimum risk and planning force stages are requirements oriented; that is, the forces generated reflect the capability required to satisfy force planning guidance. The minimum risk force is a rough estimate that is derived without considering resource cost. This estimate is subsequently refined by altering the guidance, by assuming a substantial national commitment over 10 years, and by specifying the types of units (combat, combat support, combat service support) in the force structure. The result is the planning force requirement that has the capability to execute the complete strategy. The orientation is different in the program force development stage where the emphasis is on resource availability. The manpower and funds that are expected to be available to buy capability in five years are added to the force development guidance. Those resources are prescribed by OSD and are below those required to support the planning level. The force must be decremented to be feasible within resources; the result is the program force. A dichotomy exists: the program force is more nearly resource feasible but cannot attain the national security objectives without increasing risk; the planning force can attain the national security objectives but is not resource feasible.

b. Time Focus of Forces. The minimum risk and planning force stages focus on capability requirements at the end of the mid-range period, 2-10 years. Although the temporal focus is common, the minimum risk force is assumed to exist in the 10th year while the planning force identifies the growth of the force over the 10-year period. In the program force stage, growth is also addressed, but the time period is shorter, 2-6 years. The shorter time span aids in minimizing the disparity between the capability of the forces.

c. Crosswalks Within Force Development. Crosswalks are common areas of consideration that exist among the three stages of the force development process; included are: the force planning guidance, required delivery dates (RDD), and capability tradeoffs and assumptions. Force planning guidance, scenarios, generally remain consistent; at each stage the combat areas are refined, the threat reassessed, and force objectives narrowed. RDD are first determined from studying the outcome of minimum risk force development and then are refined in succeeding stages. Eventually the RDD are used in assigning unit priorities and, more generally, developing force packages. Capability tradeoffs and the complementary assumptions are particularly sensitive to resource guidance and are discussed in (a) and (b) below.

(1) Capability Trade-off Crosswalks. A method of decrementing force requirements is to trade off capability, expressed in TOE units, for capability in any feasible form. A purpose of developing the minimum risk force is to define the required combat capability, in divisions, to satisfy a scenario. Knowing the total number of divisions, in subsequent stages, the object is to determine how many Army divisions will be required. This is done by assuming how many friendly and allied divisions are available to assist in the combat area, and subtracting those from the total required divisions. The difference is the number of Army divisions required and serves as a basis for attainability studies in the planning force development stage. Similarly, combat service support capability requirements are decremented from the planning to the program force development stages. During the program force stage, in addition to the planning crosswalks, the capability tradeoffs are widened to nonforce considerations; e.g., POL pipelines, port availability, and host nation support are a few of the considerations.

(2) Capability Trade-off Assumptions. Capability tradeoffs exchange selected Army units in the force structure for capability in any other form available. For each tradeoff, there exists complementary tradeoff assumptions that accept a degree of uncertainty in such areas as the existence, availability, and use of the other forms of capability. As in tradeoffs, assumptions crosswalk between stages.

d. Assumptions that are not Accepted Among Stages. There are unique assumptions made within a stage that are not accepted but rather analyzed in succeeding stages; e.g., the minimum risk force assumes forces are available in theater as required; however, in subsequent stages, deployability is a key aspect of the force analysis. In the planning force development stage, some of the

assumptions are resource sensitive in the program force development stage; e.g., units in the planning force are assumed fully manned, equipment modernized, trained and ready; however, in subsequent stage, a different (usually lower) level of resources is assumed for manning, modernizing, and training the units. The program force assumptions are further altered after the force analysis is completed in October. After the force is developed by the October date, the ARSTAF and MACOM consider all alternatives, force and non-force related, in relation to the OSD guidance (CG) and further decrement the capability of the force.

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APPENDIX E

(published separately
as Volumes II and III)

CAA-SR-79-6

APPENDIX F

COMPUTER BASED TOOLS

F-1. INTRODUCTION AND PURPOSE. Initially, the MAKRO group expected to be able to obtain the data necessary to perform a critical path analysis of the PPBS. As discussed in Chapter 2, this proved to be infeasible. The tremendous size and complexity of the PPBS precluded any effort aimed at generating meaningful workload data to which the critical path methodology could be applied. Indeed, the size and complexity was such that the identification, examination, and elaboration of all key activities was, in itself, a very time-consuming requirement. The situation was further exacerbated by the changing nature of PPBS; e.g., the fact that a particular guidance document was used to perform a PPBS action this year does not imply a predecessor/successor relationship which will always be true, since the schedules for guidance publication vary significantly from year to year and PPBS process schedules remain relatively fixed.

a. General Method Selection. Problems such as those mentioned above created a need to apply human, rather than automated, logic to the PPBS models generated. There was a requirement to apply the logic in an orderly, efficient manner to best utilize the manpower and time available for the analysis. It was soon apparent that manual creation and revision of descriptive network models was unsatisfactory. An attempt was made to develop a software package that would take advantage of the interactive capability of the Tektronix 4081, but the size of the models caused this approach to prove unsatisfactory. A decision was then made to develop a computer software program for use with the UNIVAC 1108 which would generate network models of a type suitable for analysis in the MAKRO Study.

b. Design Process. The characteristics desired in the network models were: (1) time sequencing of events; (2) narrative description of work activities; (3) identification of the agency responsible for the activity; (4) minimization of arc overlap (crossing); (5) hierarchical ordering of agency involvement (e.g., OSD activities above DA activities, etc.). The MAKRO Graphics Utility (MGU) was designed to produce network models which possessed characteristics (1) through (3). The other two characteristics tend in many cases to represent competing desires. In these time-phased networks, the horizontal location of a node is fixed by the date of event occurrence. Therefore, minimizing arc crossing must be accomplished by vertical positioning of the node. If the agency performing the activity is assigned a hierarchical

order which is reflected in the model, the ability to minimize the number of line crossings is hampered. Recognizing this, it was decided that the software program would be designed to allow the analyst to vertically position nodes in order to emphasize the network characteristic which best promotes clear understanding of the process depicted. The MGU provided an output which assisted the analysis effort and, importantly, served to describe the process to others in a clear and understandable fashion. In the following paragraphs, a technical description of the software package is presented.

F-2. GENERAL DESCRIPTION. The MAKRO Graphics Utility (MGU) was designed as a general purpose network depiction package. It will display an arbitrarily complex network which has time sequenced node entries. It calculates arc temporal length and displays the results with other arc-relevant information. An extensive audit and diagnostic reporting capability is incorporated, and a large portion of the functional processing capability is dedicated to the generally unsolvable problem of minimizing arc intersections for a directed two-dimensional graph. An algorithmic as opposed to a heuristic approach is used to solve this problem. Provision has been made for the analyst to improve upon the machine solution of the problem by means of parametric inputs; in particular, there is a "banding" specification (i.e., ability to restrict predefined node sets to a specified vertical stratum) and a "Y override" capability (i.e., ability to supersede automatic Y ordinate generation by specifying Y ordinate placement relative to band in percent). Finally, this routine allows extreme flexibility in terms of generated plot output variability. It is completely parametric with regard to: (a) Y ordinate minimum value, (b) Y ordinate maximum value, (c) X ordinate incremental spacing, (d) character size, (e) node size, (f) plot scaling factor (for both X and Y ordinates), and (g) maximum temporal length audit trigger.

F-3. MGU INPUT. MGU reads three serial data sets as input. They are:

- a. Band Data Set. This data set specifies the band composition and band relative placement.
- b. Calendar Data Set. This data set specifies the working and nonworking day composition.
- c. Network Data Set. This data set defines the user input network. The network is defined in terms of arc elements. For each arc element entry record there is specified:

- (1) Predecessor node

- (2) Successor node
- (3) Work activity description
- (4) Responsible agency title
- (5) Y override
- (6) Band element
- (7) Time of activity start

F-4. MGU OUTPUT. The MGU output consists of:

- a. The CALCOMP generated network graphical plot. Samples are in Appendix E.
- b. A set of error diagnostics. These diagnostics are designed to warn the operator of unusual network characteristics e.g., excessive arc lengths or inverted predecessor/successor relationships. This warning of exception data prevents the generation of plots when certain types of input errors are made.
- c. A sorted listing of network nodes. The listing details all nodes in the network and lists predecessor nodes for each.

F-5. DESCRIPTION OF COMPONENT ELEMENTS OF MGU. The mainline program links the storage scratch pool and then serially calls the elements (subroutines) necessary to perform the composite MGU functions. These elements and their component elements are discussed below, in order: BLDCAL, BLDBND, BLDNOD, AUDIT, SRTIT, SETVLS, PRTAR, and PLTIT. Figure F-1 provides perspective for the discussion of component elements.

- a. BLDCAL. This routine inputs the data set which defines working and nonworking days. It translates this data set into internal core storage format and also builds subtotal count entries of elapsed days.
- b. BLDBND. This routine inputs the banding data set. It performs audits of this data set and translates it into internal core storage. It also normalizes banding data to cover the full plot Y axis.
- c. BLDNOD. This routine inputs the network definition data set and translates this network information into internal core storage. In order to perform this function, it calls elements BLDPRE and BLDSUC.

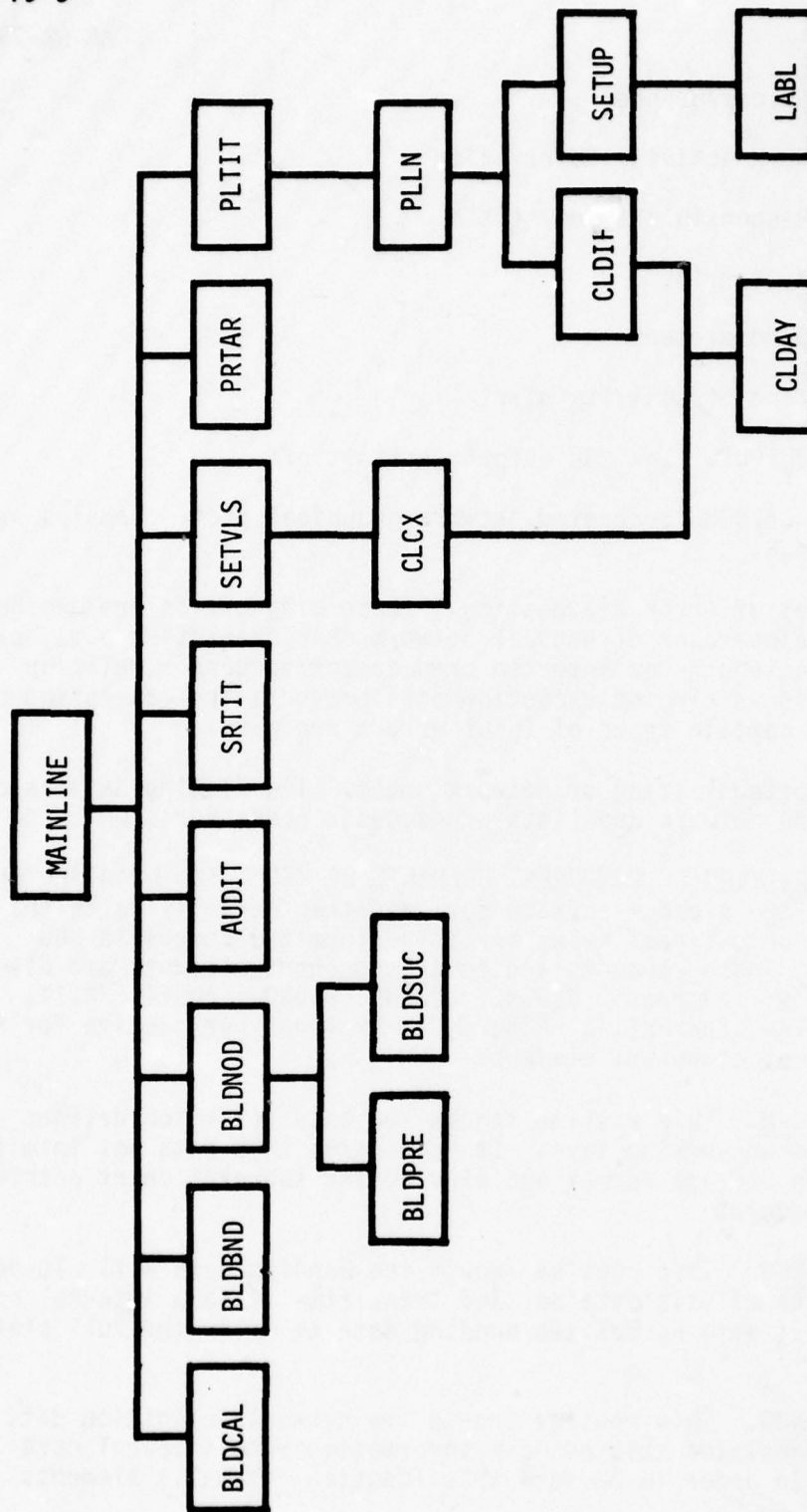


Figure F-1. MAKRO Graphics Utility Element Composition

d. AUDIT. This routine prints audit diagnostics for the internally created network. It currently flags the following error conditions: (1) any node which has no associated time, (2) predecessor nodes which lag successor nodes in time, and (3) arc lengths which exceed a predefined time limit.

e. SRTIT. This routine sorts the node set. The order of sort (high-to-low) is: (1) sort by time, (2) sort by band, and (3) sort by node title.

f. SETVLS. This routine determines and sets X and Y axis ordinates for the node set. The X ordinate is computed as a linear function of total elapsed days (both working and nonworking) between nodes. The Y ordinate is computed as a relative location within the band for the given node. If a Y override is specified for the given node, then the Y ordinate is calculated as the relative vertical distance (in percent) from the bottom of the band (i.e., 0% corresponds to the Y ordinate for the bottom of the band, and 100% corresponds to the Y ordinate for the top of the band). If no Y override is given, then the Y ordinate is calculated as a function of the node sort order and number of nodes (at this time value) within the given node band. This calculation always results in equal vertical spacing between nodes (independent of Y overrides).

g. PRTAR. This routine prints the sorted nodes array giving node title, node time, and band. This print is used to provide a quality assurance audit of the user's input network data, since no assumptions are made by MGU on initial sort order.

h. PLTIT. This routine produces the CALCOMP plot of the user input network. It plots: (1) time labels, (2) node circles, (3) node titles, (4) arcs, (5) work activity descriptions, (6) responsible agency titles, and (7) arc length information for both working and nonworking days. It calls element PLLN in order to plot (4) through (7) above.

i. BLDPRE. This routine builds internal core storage information on the set of predecessor nodes. It builds the node title entry and with each node entry also builds the following associated data: (1) node time, (2) Y override, and (3) node band.

j. BLDSUC. This routine builds internal core storage information (in a core scratch pool) for the set of successor nodes associated with a given predecessor node. With each successor node entry, it also builds the following associated data: (1) work activity description and (2) responsible agency title.

k. CLCX. This routine calculates an X ordinate based on the number of total days elapsed between the earliest defined node time and a target node time. It calls element CLDAY in order to perform this function.

l. PLLN. This routine generates CALCOMP plot data for network arcs. It performs geometric analysis to determine starting and ending points, angle orientation, and dynamic centering of arc labels. It also audits for instances of arc-node intersections and generates bypass arcs for this contingency. The resultant graphical data generated are: (1) arcs, (2) work activity descriptions, (3) responsible agency titles, and (4) arc length information for both working and nonworking days. It calls elements CLDIF and SETUP to perform these functions.

m. CLDIF. This routine calculates the working and nonworking day difference between two arbitrarily specified nodes. It calls element CLDAY in performing this function.

n. SETUP. This routine generates the CALCOMP plot data which shows work activity descriptions, responsible agency titles, and arc length information for both working and nonworking days. It calls element LABL to perform these functions.

o. CLDAY. This routine calculates the number of working and nonworking days from the beginning calendar entry to an arbitrarily specified node.

p. LABL. This routine generates the CALCOMP plot data for arc labels which contain (1) work activity description, (2) responsible agency titles, and (3) arc length information. It consists predominantly of analytic geometry functional subcomponents which calculate angle, distance, character size, and starting ordinate information.

GLOSSARY OF TERMS

ABBREVIATIONS, ACRONYMS, SHORT TERMS AND OFFICE SYMBOLS

AA	action agency (ies)
AAO	Authorized Acquisition Objective
ABE	Army Budget Estimate; OSD refers to this as The Budget Estimate Submission
acts	activities
ADCSOPS (JA)	Assistant Deputy Chief of Staff for Operations and Plans, Joint Affairs
adj	adjust, adjustment
adv	advance(d)
AFCENT	Allied Forces, Central Europe
AFPOA	Army Force Planning Data and Assumptions
agcy	agency
AIF	Army Industrial Fund
ALCON	all concerned
AMF	Army Management Fund
ammo	ammunition
AMP	Army Materiel Plan
anal	analysis, analyze
AO	Action Officer
APDM	Amended Program Decision Memorandum
APPGM	Army Planning and Programing Guidance Memorandum
appn, app'n	appropriation

CAA-SR-79-6

AR	Army regulation(s)
ARCOB	see DAAR-COB
ARCOZ	see DAAR-COZ
Army Flimsy	Written proposal for a change to a joint green paper. Similar documents prepared by other Services are Air Force Flimsy, Navy Flimsy, and Marine Corps Flimsy
ARPRINT	Army Program for Individual Training
ARSTAF/ARSTF	Army Staff
ASA	Army Strategic Appraisal
ASA(IL&FM)	Assistant Secretary of the Army (Installations, Logistics, and Financial Management)
ASARC	Army Systems Acquisition Review Council
ASF	Army Stock Fund
ATLAS	A Tactical, Logistical and Air Simulation; a computer-based, theater-level, combat simulation model
AUTS	Automated Update Transaction System
BEG	OSD Budget Estimate Guidance
betwn	between
Blue Bullet	A Joint Staff action directive prepared on blue colored paper assigning action to an agency within the Joint Staff. It is sometimes called Blue Directive
BMDPM	Ballistic Missile Defense Program Manager
BOB	Bureau of the Budget; replaced by Office of Management and Budget (OMB)
BOIMARS	Basis of Issue Management and Recording System
BOIP	Basis of Issue Plan

Br	Branch
BRC	Budget Review Committee
BRCS	Revolving Funds Subcommittee of the BRC
brfd	briefed
bud(g)	budget
budrevcom	Budget Review Committee (BRC)
Buff	Draft of a joint action prepared on buff colored paper and circulated by the heads of directorates and agencies of the OJCS for consideration by the Service Planners. It requires formal Service concurrence or comments and recommendations (O-6 level joint staff action)
BY	Budget Year
C3	command, control and communications
CAA	United States Army Concepts Analysis Agency
CAA-FDS	Support Forces Group, Force Concepts and Design Directorate, CAA
CAA-JFJ	Joint Forces Group, Joint Forces and Strategy Directorate, CAA
CABUB	see DACA-BUB
CAMP	Computer Assisted Match Program; a computer-based program which interrelates FASTALS Model output with other data bases
CAR	Chief of Army Reserve
Cat I	Category I; DPS reclama based on minor errors
Cat II	Category II; DPS reclama based on substantive matter
CBO	Congressional Budget Office
CCH	Chief of Chaplains

CAA-SR-79-6

CDDP	Core Development Decrement Package(s)
CDPS	Consolidated Decision Package Set(s)s
CEM	Concepts Evaluation Model; a two sided, fully automated, theater-level, combat simulation model
CG	Consolidated Guidance
CINC	Commander(s) in Chief
CJCS	Chairman, Joint Chiefs of Staff
cmbt	combat
cmts	comments
CNGB	Chief, National Guard Bureau
COB	command operating budget
COBE	command operating budget estimate
COE	Chief of Engineers
commo	communication
comnt	comment
COMPLIP	Computation of Manpower Programs by Linear Programming; a computer-based, personnel management model
conf	conference
Cong	Congress, Congressional
consder'n	consideration
consol	consolidate(d), consolidation
cont('d)	continue(d)
contg	contingency
coord	coordinate(d), coordination

corr	corrigendum, corrigenda
Corrigendum	Published change to a joint paper that can be utilized in the buff or green stage
CRAF	Civil Reserve Air Fleet
CRRC	Construction Requirements Review Committee
CS	combat support
CSA	Chief of Staff, Army
CSAM	Chief of Staff, Army, Memorandum. A written proposal for substantive change to a joint paper. A CSAM can also be used to recommend or initiate a joint action. (Similar documents prepared by other Services are Chief of Staff Air Force Memorandum (CSAFM); Chief of Naval Operations Memorandum (CNOM); and Commandant Marine Corps Memorandum (CMCM))
CSDPD	see DACS-DPD
CSS	combat service support
CY	calendar year
DA	Department of the Army
DAAG-PE	Directorate of Personal Affairs, Office of the Adjutant General
DAAR-COB	Budget Branch, Comptroller Division, OCAR
DAAR-COZ	Comptroller Division, OCAR
DAB	Director of the Army Budget, OCA
DACA-BUB	Budget Formulation Office, ODAB, OCA
DACA-BUR	Assistant Director (Resources and Analysis), ODAB, OCA
DACA-CAF	Force Analysis Division, Directorate of Cost Analysis, OCA

CAA-SR-79-6

DACS-DP	see PAED, OCSA
DACS-DPD	Program Development Division, PAED, OCSA
DACS-DPM	Manpower and Force Program Analysis Division, PAED, OCSA
DAEN-MCP	Program, Planning and Civil Preparedness Division, Directorate of Military Construction, OCE
DAEN-MCZ	Director of Military Construction, OCE
DAEN-ZCP	Programing Division, Office of the Assistant Chief of Engineers, OCE
DALO	Office of the Deputy Chief of Staff for Logistics (ODCSLOG)
DALO-PLO	Operations Division, Directorate for Plans, Doctrine and Systems, ODCSLOG
DAMA	Office of the Deputy Chief of Staff for Research Development and Acquisition (ODCSRDA)
DAMA-CS	Combat Support Systems Directorate, ODCSRDA
DAMA-CSM	Munitions Division, Combat Support Systems Directorate, ODCSRDA
DAMA-PP	Materiel Plans and Programs Directorate, ODCSRDA
DAMA-PPP	Procurement, Program and Budget Division, Materiel Plans and Programs Directorate, ODCSRDA
DAMA-PPR	Research, Development, Testing and Evaluation (RDTE) Program and Budget Division, Materiel Plans and Programs Directorate, ODCSRDA
DAMA-PPT	Program Coordination Team, Materiel Plans and Programs Directorate, ODCSRDA
DAMA-WS	Weapons Systems Directorate, ODCSRDA
DAMA-WSM	Missiles and Air Defense Systems Division, Weapons Systems Directorate, ODCSRDA

DAMI	Office of the Assistant Chief of Staff for Intelligence (OACSI)
DAMI-IS	Intelligence Systems Directorate, OACSI
DAMO	Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS)
DAMO-FDA	Force Accounting and Systems Division, Force Programs and Structure Directorate, ODCSOPS
DAMO-FDF	Force Plans and Structure Division, Force Programs and Structure Directorate, ODCSOPS
DAMO-FDP	Programing and Allocations Division, Force Programs and Structure Directorate, ODCSOPS
DAMO-NCN	Nuclear Division, Nuclear and Chemical Directorate, ODCSOPS
DAMO-ODO	Regional Operations Division, Operations and Readiness Directorate, ODCSOPS
DAMO-ODR	Force Readiness Division, Operations and Readiness Directorate, ODCSOPS
DAMO-RQ	Requirements Directorate, ODCSOPS
DAMO-RQR	Requirements Programs and Priorities Division, Requirements Directorate, ODCSOPS
DAMO-SSA	Security Assistance Division, Strategy, Plans and Policy Directorate, ODCSOPS
DAMO-SSP	Strategic Plans and Policy Division, Strategy, Plans and Policy Directorate, ODCSOPS
DAMO-SSW	War Plans Division, Strategy, Plans and Policy Directorate, ODCSOPS
DAMO-TRI	Individual Training Division, Training Directorate, ODCSOPS
DAMO-TRU	Unit Training Division, Training Directorate, ODCSOPS

CAA-SR-79-6

DAMO-ZA	Deputy Chief of Staff for Operations and Plans (DCSOPS)
DAMO-ZC	Assistant Deputy Chief of Staff for Operations and Plans for Joint Affairs
DAMO-ZCJ	Army Secretary for Joint Actions, Office of the Assistant Deputy Chief of Staff for Operations and Plans
DAMPL	Department of Army Master Priority List
DAPE	Office of the Deputy Chief of Staff for Personnel (ODCSPER)
DAPE-PBB	Budget Division, Directorate of Plans, Programs and Budget, ODCSPER
DAPE-PBM	Manpower Programs Division, Plans, Programs and Budget Directorate, ODCSPER
DAPE-PBP	Plans Division, Plans, Programs and Budget Directorate, ODCSPER
DAPPL	Department of Army Programing Priority List
DARCOM	US Army Materiel Development and Readiness Command
DARCOM-MM	Materiel Management Directorate, HQ DARCOM
DCSLOG	Deputy Chief of Staff for Logistics
DCSOPS	Deputy Chief of Staff for Operations and Plans
DCSPER/DCSPR	Deputy Chief of Staff for Personnel
DCSRDA	Deputy Chief of Staff for Research, Development and Acquisition
DCSRM	Deputy Chief of Staff for Resource Management
dec	decrement(ed)
dep	depot

DEPOPSDEP	Deputy Operations Deputy; for the Army this is the ADCSOPS(JA)
DESCOM	Depot Systems Command
dev(p'd)	develop(ed), development
DFE	division force equivalent
dir/mon	director/monitor
docs	documents
DOD	Department of Defense
DOMA	Director of Operation and Maintenance, Army, OCA
DPAE	Director, Program Analysis and Evaluation, OCSA
DPI	data processing installation(s)
DPG	Defense Policy Guidance
DPPG	Defense Policy and Planning Guidance (replaced by CG in CY 78)
DPR	Data Processing Request
DPS	Decision Package Sets
drft	draft
DRMS	Defense Resource Management Study requested by the President, D.B. Rice, Study Director
DSA	Defense Supply Agency
DSARC	Defense Systems Acquisition Review Council
DU	Decision Unit
dvlpmnt	development
ELIM	Enlisted Loss Inventory Model; a computer-based personnel management model

CAA-SR-79-6

ENMCZ	See DAEN-MCZ
EPA	Extended Planning Annex
est	estimate
EUSA	Eighth US Army
exec	execute, execution, executive
exp	expand
FAS	force accounting system
FASTALS	Force Analysis Simulation of Theater Administrative and Logistic Support; a computer-based model that calculates time-phased logistic and administrative workloads during theater combat, and identifies the administrative and logistic units to perform the workloads
FDMIS	Force Development Management Information System
FHMA	Army Family Housing Management Account
fisc	fiscal
Flimsy	Draft version of a joint action prepared by a joint action officer. Name derived from original use of carbon and second sheets; now mimeographed on white paper. (Do not confuse with Army Flimsy.)
form	format, formulate
FORSCOM	US Army Forces Command
FSA	Force Structure Allowance
funct	function, functional
fwd	forward
FY	fiscal year
FYDP	Five Year Defense Program
gen	general

grafic	graphic
Green	"Green" papers are reproduced and issued by the Secretary, JCS, to: (1) refer incoming communications to directorates and other agencies of the JCS or to the Services for information, study, guidance, and/or appropriate action; (2) submit staff studies, reports or memoranda prepared by agencies of the JCS, for consideration. "Green" also refers to a joint action prepared on green paper for consideration by the JCS
guid	guidance
HAC	House Appropriations Committee
HASC	House Armed Services Committee
hdcpy/hdcy	hard copy
HOA	Homeowners Assistance Fund, Defense
HQDA	Headquarters, Department of the Army
HWD	collective term for ODCSRDA hardware directorates; DAMA-CS and DAMA-WS
ident	identify, identification
IIQ	Initial Issue Quantity
implmt	implement
incr	increment
info	information
init	initial
instr	instruction(s)
inst(s)	installation(s)
IPR	in-process review
IPSP	Intelligence Priorities for Strategic Planning

CAA-SR-79-6

iss	issues
J4	Logistics Directorate, Joint Staff level
J5	Plans and Policy Directorate, Joint Staff level
JACO	Joint Actions Control Office (Office of the Army Secretary for Joint Actions). It can also mean the Joint Actions Control Officer
JCS	Joint Chiefs of Staff
JIEP	Joint Intelligence Estimate for Planning
JLREID	Joint Long-Range Estimative Intelligence Document
JLRSA	Joint Long-Range Strategic Appraisal; replaces JLREID and JLRSS in 1980
JLRSS	Joint Long-Range Strategic Study
JPAM	Joint Program Assessment Memorandum
JS	Joint Staff
JSCP	Joint Strategic Capabilities Plan
JSOP	Joint Strategic Objectives Plan
JSPD	Joint Strategic Planning Document
JSPDSA I	JSPD Supporting Analysis, Part I
JSPDSA II	JSPD Supporting Analysis, Part II
JSPS	Joint Strategic Planning System (see also MOP 84)
J-TAPE	A listing of Army units to be used in force development studies/analyses
JTSTF	Joint Staff
just	justification
ldrshp	leadership
leg	legislative

LIN	line item number
log	logistic(s), logistical
LOG	ODCSLOG
LOGSACS	Logistics Structure and Composition System
LOI	letter of instruction
ltr	letter
lvl(s)	level(s)
M-force	Master force
MACOM	major Army command(s)
maj	major
MAKRO	Management Analysis of Key Resource Operations (the title of the CAA study reported in this document)
manyr	man-year
MAPP	see DAMA-PP
MAPPP	see DAMA-PPP
MAPPR	see DAMA-PPR
MARDIS	Modernized Army Research and Development Information System
mbrs	members
MCA	Military Construction, Army
MCAR	Military Construction, Army Reserve
MCARNG	Military Construction, Army National Guard
MDCs/LABs	Materiel Development Centers and Laboratories

CAA-SR-79-6

MGU	MAKRO Graphics Utility
MILCON	Military Construction; collective term to include MCA, MCAR, MCARNG programs and budgets
MILPERCEN	US Army Military Personnel Center
MIS	management information system
misc	miscellaneous
mpwr	manpower
mob	mobilization
MOC	Management of Change Study; CAA Study Report 77-7, June 1977 on authorization changes
MOCA-FD	Force Concepts and Design Directorate, CAA
MOCA-FDS	Support Forces Group, Force Concepts and Design Directorate, CAA
MOCA-JFJ	Joint Forces Group, Joint Forces and Strategy Directorate, CAA
MOP 84	JCS Memorandum of Policy No. 84, Joint Strategic Planning System (JSPS).
MPA	Military Personnel, Army
mpwr	manpower
MRC	Materiel Readiness Center, Materiel Readiness Command
msc	major subordinate command
MTMC	Military Traffic Management Command
mtng/mtg	meeting
mtrx	matrix
MTOE	Modification Table of Organization and Equipment

NBPRP	National Board for the Promotion of Rifle Practice
NDCI	nondivisional combat increment
nec	necessary
NG	National Guard
NGB	National Guard Bureau, Department of the Army and/or Air Force
NGB-ARC	Comptroller Division, Office of the Director, Army National Guard, OCNGB
NGPA	National Guard Personnel, Army
NSCM	National Security Council Memorandum
nuc	nuclear
OACSI	Office of the Assistant Chief of Staff for Intelligence
OCA	Office of the Comptroller of the Army
OCAR	Office of the Chief, Army Reserve
OCE	Office of the Chief of Engineers
OCET	technical review by OCE staff
OCNGB	Office of the Chief, National Guard Bureau
OCSA	Office of the Chief of Staff, Army
OCOA	Office of the Comptroller of the Army
ODAB	Office of the Director of the Army Budget, OCA
ODAS	Office of the Director of the Army Staff
ODCSLOG	Office of the Deputy Chief of Staff for Logistics
ODCSOPS	Office of the Deputy Chief of Staff for Operations and Plans

CAA-SR-79-6

ODCSPER	Office of the Deputy Chief of Staff for Personnel
ODCSRDA	Office of the Deputy Chief of Staff for Research, Development and Acquisition
ofcr	officer
OMA	Operation and Maintenance, Army
OMA(7M)	maintenance program, OMA
OMA(7S)	supply program, OMA
OMAR	Operation and Maintenance, Army Reserve
OMARNG	Operation and Maintenance, Army National Guard
OMB	Office of Management and Budget
OMNIBUS	An annual assessment of current force capability
OP	operational project
OPLAN	operation plan
OPS	see ODCSOPS
OPSDEP(s)	Short for Operations Deputy. By JCS Charter, the Army representative is the DCSOPS. However, the ADCSOPS(JA), who is the DEPOPSDEP, may act for the OPSDEP on all joint matters. The use of the term OPSDEP also includes DEPOPSDEP.
OSD	Office of the Secretary of Defense
PABE	Program Analysis and Budget Estimate
PAED	Program Analysis and Evaluation Directorate, OCSA
PAO	Program Analysis Office, MACOM
PAPPGM	Preliminary Army Planning and Programing Guidance Memorandum
PARR	Program Analysis and Resource Review

PBAC	Program and Budget Advisory Committee
PBC	Program and Budget Committee
PBG	Program and Budget Guidance
PCS	permanent change of station
PDB	Program Data Base
PDIP	Program Development Increment Package
pdirs	program directors, OMA
PDM	Program Decision Memorandum
PE	program element
PEPBB	see DAPE-PBB
PERSACS	Personnel Structure and Composition System
PGRC	Program Guidance and Review Committee
PIA	Personnel Inventory Analysis; a computer-based personnel management model
PIN(s)	Program Issue Narrative(s)
pkgs	packages
Planner	A senior Service representative (colonel or captain, USN) who meets with representatives of the other Services and the Joint Staff to consider a buff paper. The Planner is authorized to exercise approval for his Service on appropriate Joint Staff actions.
Planner's Memo	A written proposal for substantive change to a joint paper in buff stage
POC	point of contact
POM	Program Objective Memorandum

POMCUS	prepositioning of materiel configured to unit sets
PPBS	Planning, Programing and Budgeting System
PPG	Planning and Policy Guidance; an ODCSRDA document providing procurement guidance
PPGM	OSD Planning and Programing Guidance Memorandum; replaced by CG in CY 78
PPI	POM Preparation Instructions
PRAC	Program Review and Analysis Committee, MACOM
prep('d)	prepare(d), preparation
Preflimsy	First phase draft version of a joint action prepared by joint action officer
Pres	President of the United States
prev	previous
prgm	program
prgmrs	programers
prob	problem
prog	program
prog dec memo	OSD Program Decision Memorandum
PROC	Procurement, Army. Includes: Aircraft Procurement, Army; Missile Procurement, Army; Procurement of Weapons and Tracked Combat Vehicles, Army; Procurement, Ammunition, Army; and Procurement, Other, Army.
procmt/procmnt	procurement
proj	project
prop	propellant(s)

psn	position
pub('d)	publication, publish(ed)
purp	purpose
QA	quality assurance
RBRC	Rump BRC
rec/rcmd	recommend(ed), recommendation
RCPAC	US Army Reserve Components Personnel and Administrative Center
RDAISA	Research Development and Acquisition Information Systems Agency
R-day	1st day of 5-day DPS turnaround cycle
RDAC	Research, Development and Acquisition Committee
RDD	required delivery date; date on which Army units are required to arrive in a theater
RDTE	Research, Development, Test and Evaluation
rec'd	received
Red Stripe	An appraised JCS paper. The term refers to a red stripe that appears around edge of the front page of a joint paper to indicate it has been approved by the JCS and implementation actions initiated.
req('d)/rqd	require(d)
rev	revolving, review
ROK	Republic of Korea
RPA	Reserve Personnel, Army
RPGRG	Rump PGRC
rqts	requirements

CAA-SR-79-6

rtn	return
SA	Secretary of the Army
SAC	Senate Appropriations Committee
SACS	Structure and Composition System
SAMPAM	system for automation of materiel plans for Army materiel
SASC	Senate Armed Services Committee
sched	schedule
SECARMY	Secretary of the Army
SECDEF	Secretary of Defense
sectn	section
SELCOM/SLCOM	Select Committee
SELCOM/SECT	SELCOM/Army Secretariat
SHN(s)	shorthand note(s)
SIGMA	SACS Information Gathering and Management Analysis
SOP	standing operating procedure
SPC	Strategy and Planning Committee
spec	special
SSN	standard study number(s)
State	State Adjutants General and USPFO
stf(d)	staff(ed)
strat	strategic, strategy
struct	structure

subm	submit
sum	summary
TAA	Total Army Analysis
TAADS	The Army Authorization Documents System
TAG	The Adjutant General
tech	technical
tent	tentative
th	theater
TJAG	The Judge Advocate General
tng	training
TOA	total obligational authority
TOE	table(s) of organization and equipment
TPFDL	Time-Phased Force Deployment List
TPPGM	OSD Tentative Planning and Programing Guidance Memorandum; replaced by CG in CY 78
TRANSMO	Transportation Model; a computerized, inter-theater, strategic mobility simulation model
TSG	The Surgeon General
TSI	tactical support increment
UDS	Unit Data System; computer-based programs, routines, and data files consisting of force and equipment data
USA/ASA	Under Secretary of the Army/Assistant Secretary of the Army
USACAA	US Army Concepts Analysis Agency
USACC	US Army Communications Command

CAA-SR-79-6

USAFAC	US Army Finance and Accounting Center
USAMSSA	United States Army Management Systems Support Agency
USECT	Under Secretary of the Army
USPFO	United States Property and Fiscal Office
VCSA	Vice Chief of Staff, Army
WARF	wartime active replacement factors
White (or White of Green)	A JCS paper published to ensure that agreed-upon changes by the Service Planners ⁴⁴⁰ have been incorporated (see Green)
wknd	weekend
wkshts/ws	worksheets
ZBB	zero-base budget(ing)
ZBP	zero-base program(ing)